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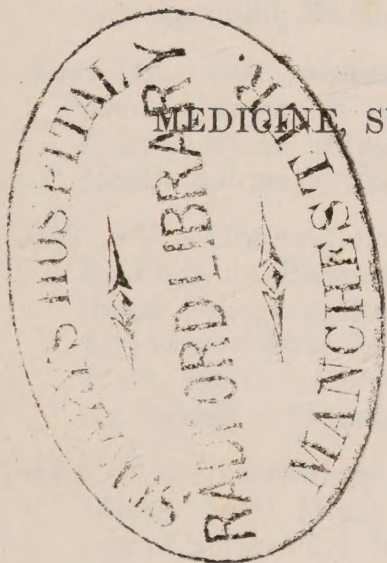
A COMPREHENSIVE VIEW

OF THE

LATEST DISCOVERIES

IN

MEDICINE, SURGERY, AND THE COLLATERAL
SCIENCES.



VOL. XXIV.

DUBLIN:

PUBLISHED BY HODGES AND SMITH,
COLLEGE-GREEN.

LONGMAN, BROWN, & CO. AND SIMPKIN, MARSHALL, & CO. LONDON;
MACLACHLAN AND STEWART, EDINBURGH; AND
SMITH AND SON, GLASGOW.

MDCCCXLIV.

DUBLIN JOURNAL

MEDICAL SCIENCE

A MONTHLY REVIEW

LATEST DISCOVERIES

DUBLIN :

PRINTED AT THE UNIVERSITY PRESS,

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NOTICE TO CORRESPONDENTS.

In our next Number we hope to be able to lay before our Readers the account of the illness of the late lamented Mr. Colles, and the result of the *post mortem* examination. For permission to do so, we have to express our thanks to the Council of the Pathological Society, who have allowed us to anticipate the regular publication of their proceedings in this particular instance, knowing the great interest attached to the subject, and anxious to meet the request expressed by the distinguished patient, *that the history of his last illness, and the appearances revealed on dissection, should be made public for the benefit of society and the advancement of science.*

THE
DUBLIN JOURNAL

OF

MEDICAL SCIENCE,

SEPTEMBER, 1843.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I. *On Inflammation and Abscess of the Uterine Appendages.* By FLEETWOOD CHURCHILL, M. D., M.R.I.A., &c.

(Read to the Surgical Society Saturday, January 28th, 1843.)

I BEG permission to bring before the consideration of the Surgical Society, the subject of inflammation of the uterine appendages, terminating most frequently in abscess, sometimes unconnected with childbirth, but more frequently following delivery within a longer or shorter time. My attention has been long directed to such cases, partly from finding them scattered among the writers on diseases of females, and partly from several such having come under my own observation; and it appears to me, that a collection of these cases, with a few practical deductions from them, may throw light upon a subject hitherto rather obscure. In part, however, my object has been anticipated and satisfactorily attained by a paper, which my friend Dr. Doherty read before the Obstetrical Society.* He related several cases of acute inflammation of the

* See Dublin Journal, November, 1842, p. 199.

uterine appendages occurring within a short time after delivery, and which were successfully combated by antiphlogistic and mercurial remedies. The essay is an extremely valuable addition to our knowledge of puerperal diseases, though his cases occurred at an earlier period after delivery than those to which I at present refer.

Before I proceed I may as well say a word as to the title I have assumed. I dare say it will be asked, whether the seat of the abscess is in the ovaries or broad ligaments, and, if in either, why not give a more definite name to the disease. I am aware the continental writers have done so, and that among puerperal affections we read of "ovarite," and "ovarite suppureè," &c. &c. But, if I may venture to judge from my own experience, I should say, that it is a very difficult point to decide, that the ovary only, or the folds of the broad ligament only, is the seat of the disease. I will not say it is impossible, although in most of the best marked cases the ultimate proof of a post mortem examination is wanting; but at least it is "*à priori*" improbable that one part should be alone involved, when both have so recently shared in the great convulsion of childbirth, and reasoning from facts, I do not see anything subversive of this opinion. I shall, therefore, speak of the disease as affecting the uterine appendages, be they fallopian tubes, broad ligaments, or ovaries—one or all—nay, as extending itself sometimes to the neighbouring cellular tissue.

The affection is sufficiently frequent to merit our careful attention, and there is reason to believe that it is even more so than has been suspected, nor is it improbable that many females have owed the delicate health in which they have remained for some time after confinement, to this condition of the parts, undetected because of the obscurity of the symptoms; neither has it been very distinctly recognized by writers on the diseases of the womb,—their observations are slight and the cases few. I shall quote a case from La Motte, another from Mauriceau, and several from Puzos, after whose time, although in several authors

there is an evident allusion to the disease, they do not add much to our information.

The cases to which I beg your attention naturally divide themselves, first—into those which occur unconnected with gestation or delivery ; secondly—those which come on shortly after delivery, as may be seen in Dr. Doherty's essay ; and thirdly—those more chronic in their development and progress.

CASE I.—I was consulted in May, 1842, by Mary Kearns, who supposed herself to be pregnant, though menstruating regularly. I saw immediately that this was not the case. She was about 44 years of age, had five children, the youngest being two years old. For some time *past* she had felt pain in the inguinal regions and above the pubis, but attributed it to pregnancy.

Shortly after consulting me the pain increased, and she felt something give way to the left of the pubis, and immediately afterwards a quantity of puriform matter was passed by the rectum, from whence a sanguineo-purulent discharge continued for a week and then ceased, and she recovered. After a few weeks she had a return of the pain, followed by the discharge, which ceased again after a week or two. During the week preceding the discharge, she suffered from severe dragging pain in the inguinal regions, perspirations, loss of appetite, dysuria and tenesmus, all which symptoms disappeared after the matter was evacuated. The remedies used were leeches and poultices to the seat of the pain ; small doses of calomel and James' powder, and an occasional aperient.

CASE II.—In March, 1842, I was requested to see Mrs. Harris in the Meath Hospital ; she was about 28 years of age ; had been married two years, and both before and since had menstruated regularly but never had children. For several weeks before entering the hospital she had suffered from what she conceived to be gravel, i. e. frequent desire to pass water, sometimes with difficulty, and the urine deposited a reddish sediment. Her health had deteriorated, her appetite diminished, and she became very thin. A week after her admission she discovered a

large tumour in the abdomen, which she had not before noticed, and the symptoms of gravel disappeared. On examining the abdomen, I found a tumour reaching nearly to the umbilicus, in shape something like an enlarged uterus, and extending laterally, though not so high, to the iliac fossæ, especially on the right side. It was hard and little moveable, and, on the right side, very tender on pressure. There was no superficial tenderness. Internally I found the cervix uteri of the usual size, high in the pelvis, not tender on pressure nor very moveable. The body of the uterus did not swell out from the cervix more than usual, but behind it was felt the lower end of a soft swelling. A shock in the abdominal tumour was but little felt by the finger placed on the cervix uteri. The diagnosis was very difficult. On the one hand the abdominal tumour resembled the uterus enlarged, and yet the lateral tumefaction, and the swelling behind the cervix, showed that more than the uterus was engaged.

Two days after I saw her, a quantity of purulent matter escaped by the rectum; the abdominal tumour was diminished; its tenderness gone, and the tumour behind the cervix had disappeared. No rigors occurred. The discharge continued at intervals for some time, and the bulk of the abdominal tumour was gradually reduced.

June 10th, 1842.—Her strength is much reduced, but the tumour is lessened to one-fourth of its former size. The discharge occurs occasionally. She has since completely recovered.

CASE III.—“The wife of one of the ‘Cassiers de l’Extraordinaire des Guerres,’ confined five weeks previously, perceived a swelling in the abdomen, which had followed paroxysms of pain in that region, from which she had suffered since the tenth or twelfth day after her confinement. The tumour was the size of an infant’s head, and appeared to be situated in the right broad ligament. It occupied the space between the side of the pubis and the anterior superior spine of the ilium. Although the tumour had lasted near two months, and had acquired a considerable

degree of hardness, I did not hesitate to attack it with ‘resolutifs.’ The patient was bled four times in two days, and given ‘bouillons légèrement aperatifs;’ lavements and cathartics followed, with aromatic diaphoretics. The tumour gradually diminished in size, and at length, after six weeks of treatment, disappeared.”—(*Abridged from Puzos, 1759, p. 358*).

CASE IV.—“An extremely delicate lady, and the wife of a ‘payeur des rentes,’ was attacked, about the tenth day after a natural labour, with slight fever. As the convalescence in other respects was proceeding favourably, temporizing treatment was adopted, until pain in the belly, limited to one spot, demanded special attention. I then (says the author) found an ‘engorgement’ of one side of the belly, pressure upon which increased the pain. Venesection was practised and repeated several times, in spite of which the tumour increased for eight or ten days, until it surpassed the size of the head of an infant. ‘Resolutifs’ were diligently employed; the patient was again bled; repeated purgatives were administered, and the diet was extremely low. These means succeeded; in about a month the tumour diminished, and in another had disappeared.”—(*Abridged from Puzos, p. 359*).

CASE V.—“The wife of a baker of the Faubourg St. Antoine, about six weeks after her confinement, sent for M. Puzos, to consult him about a tumour in the belly. The swelling was enormous, extending from the fold of the groin to the superior part of the ilium, and forward to the linea alba and umbilicus, filling the space between these points and the pubes. For a month he employed venesections, bitters, purgatives, and topical applications without success. After this, absorbents and opiate diaphoretics were given, with infusion of saffron and some tea, with slight nourishment; soon after profuse sweats occurred, and the tumour disappeared by degrees, three months after delivery and after nearly two of treatment.”—(*From Puzos, p. 360*).

CASE VI.—“A lady in the Rue Vivienne, naturally deli-

cate, whose constitution had been enfeebled by repeated child-bearing, was happily delivered for the fifth time ; the milk was secreted at the usual time, and the uterine excretions were natural, but the lady did not gain strength. After a while fever set in, accompanied with loss of appetite and pains in the abdomen. These symptoms were much relieved by emollient glysters, &c., and M. Puzos ceased attendance. After some time he visited the patient again, and finding her in much the same condition, made a careful examination of the abdomen, and detected a tumour as large as an orange in the broad ligament of the right side, adherent externally but moveable internally. Venesection was repeatedly employed with purgatives and cataplasms. At first the tumour increased in size, but afterwards the symptoms diminished, and in a month the tumour had disappeared.”—(*From Puzos, p. 361*).

CASE VII.—Anne Coffey, æt. 26, admitted into the Meath Hospital in July, 1842 ; was confined a month ago of her first child, after a natural labour ; two days afterwards she had a rigor and pain all over the abdomen, with tenderness, for which she was blistered. The general pain and soreness diminished afterwards, but became localized as it were in the left iliac region. She then found it impossible to stand upright, and moving about distressed her. She suffered stinging pain in the region just named, with dysuria and tenesmus, and, after a few days, perceived a tumour in that spot, which has gradually increased. From the beginning it has been hard, painful and tender ; it is still hard, though less painful, and as large as a turkey egg, somewhat moveable, and apparently quite solid. It lies just above the brim of the true pelvis, towards the left iliac fossa. The vagina is hotter than usual, but there is no enlargement in any part of it, evidently because the tumour is unusually high. The tenesmus and dysuria have ceased. Leeches, fomentations, and blisters were applied over the tumour, and calomel, with gentle purgatives, administered in-

ternally and with considerable success. The pain ceased, the tenderness abated, and the tumour diminished so much in size as to afford a reasonable hope of its resolution. This, however, I cannot record, as she left the hospital.

CASE VIII.—Mrs. M., æt. 32, was safely delivered of her first child May 22nd, 1843, after a labour of 18 hours ; placenta expelled without delay. Her convalescence proceeded naturally until the seventh day, when she apparently caught cold, and was attacked by rigors, weariness, pains in the limbs, some abdominal pain, thirst, quick pulse, &c. &c., in short she had a smart attack of ephemeral fever, which was treated in the usual way and gradually subsided. When nearly well, about a fortnight after delivery, she had an attack of diarrhœa, which was rather obstinate, and after the discharges were under control, she suffered a good deal at intervals from what she called griping pains. At this time the lochia had gradually lessened in quantity, but were natural in quality ; the milk had altogether subsided ; her pulse was 100 ; tongue white, with some thirst. She complained also, that when she had occasion to get out of bed she could not stand upright. This led me to make a careful examination, and I found on the left side of the symphysis pubis a tumour, the size of a small apple, round, hard, tense, painful and tender. Leeches were repeatedly applied over this part, followed by fomentations and poultices, and under this treatment the pulse became quiet, the thirst diminished, the tongue became cleaner, and the tumour itself diminished and lost its tenderness. About five weeks after her confinement menstruation occurred, and with manifest relief of all the symptoms. There is still some slight fulness in the situation of the tumour, but scarcely any tenderness, and she can stand upright. She takes now quinine and nourishing diet, and a hip bath alternate nights.

CASE IX.—Dr. John Clarke (Essays, p. 72) remarks, “ my own experience has only furnished me with a single instance of a circumscribed abscess, following any inflammatory affection in

the cavity of the abdomen in a puerperal patient. This broke at the navel some months after delivery ; but the event of the case never fell within my knowledge."

CASE X.—I am indebted to my friend Dr. Logan, of Finglass, for the two following cases : Eliza Rodden, æt. 23, applied for medical aid in 1838, under the following circumstances : she is the mother of three children, and, until the present attack, enjoyed good health. About two months previously she was confined, after a quick, easy, and natural labour ; and a few days subsequently, having experienced a fright, she felt as though something cracked in her back, and became for a time unconscious. The lochia and milk were suppressed, and she was confined to her bed from inability to use her right leg. In this state Dr. Logan found her ; she complained of pain in the right iliac region, and inability to use the right leg, with occasional rigors. There was no abdominal tumour, but on making an examination "*per rectum*," an obstruction from a tumour was distinctly felt between the uterus and parietes of the pelvis. She suffered no distress from evacuating, the bladder or rectum. Fomentations were ordered. In consequence of her applying to another physician, Dr. Logan lost sight of her for some time, but she subsequently gave the following account of her progress: soon after Dr. Logan's visit, a tumour made its appearance in the lower part of the right side of the belly, and continued to enlarge until it acquired the size of a child's head, softened, and burst in the right inguinal region, just above Poupart's ligament. This occurred about two months after Dr. Logan's visit. The discharge resembled boiled flummery, without blood, and continued about a week.

She has since had a child, and recovered without any unfavourable symptoms.

CASE XI.—Alley Courtney, æt. 29, mother of four children, has for some years been in a delicate state of health ; applied to Finglass Dispensary, April 22, 1843 ; was confined March 19, 1843, after a natural and quick labour. About a week or ten

days after, she, for the first time, perceived a tumour in the left iliac region. She had suffered no pain there after her confinement, except when attempting to lie on the left side. At the time the tumour appeared, she experienced headach, thirst, &c., the lochia and milk ceased, and rigors soon set in, with great prostration of strength.

When Dr. Logan first saw her, the tumour was nearly the size of an infant's head, occupying the left iliac region, and extending into the abdomen; it was soft and fluctuating to the touch; the skin unchanged in colour, except near Poupart's ligament, where it was evidently "pointing." Poultices were ordered; and inf. quassiæ given internally.

On the day but one after, whilst changing the poultice, the abscess burst, and upwards of a quart of pus, mixed with blood, escaped. Shortly afterwards the suck returned, and she is now able to nurse her infant.

During the attack the bowels were free, and she experienced no pain in emptying the rectum or bladder.

CASE XII.—Mrs. P., æt. 40, was delivered in Nov. 1841, by the forceps, of a living child. She had been long in the first stage of labour, and the cervix uteri was torn off. Before assistance could be rendered the perineum was lacerated, and she had a tedious recovery, during which she had an attack of hysteritis, which, however, was subdued by leeches, calomel, and opium. After becoming quite convalescent, she had a sudden attack of peritonitis in February, 1842, which was relieved in the usual way—by loss of blood, and mercury. In March she had a second attack, which came on quite suddenly, but which was met promptly, skilfully, and successfully, by my friend Surgeon Morgan.

When the abdomen would bear pressure we set ourselves to discover, if possible, the cause of these sudden attacks, and we found a tumour near the right iliac region as large as a goose egg, and very tender on pressure. This we supposed to be the result of inflammation of the uterine appendages, and we con-

jectured that an escape of matter into the peritoneum had been the cause of the two attacks of peritonitis. Exactly two days after the detection of the tumour, a large quantity of matter escaped from the vagina and rectum, and the tumour greatly diminished in size, and lost its tenderness. No rigors occurred, nor were the lochia diminished in quantity. The discharge occasionally stopped for a day, and then recurred, until all tumefaction had disappeared, and the tenderness likewise.

She gradually recovered strength, and left town convalescent.

CASE XIII.—A case much resembling the foregoing, I witnessed with Dr. Houghton, some years ago. The patient had been confined during an epidemic of puerperal fever, and although she recovered to a certain extent, yet her health was far from re-established. Some weeks afterwards, whilst evacuating the bowels, she felt something give way suddenly; this was followed by a state of collapse and severe pain in the abdomen, in short, by peritonitis. She was treated by bleeding, calomel and opium, in large doses, with perfect success. The cause of the peritonitis, which at first was extremely obscure, was explained in a few days, by the escape of a quantity of purulent matter from the vagina.

This patient recovered perfectly.

CASE XIV.—Mrs. M., æt. 28, was confined of her first child, after a natural labour. Convalescence satisfactory for four or five days; she then was attacked by rigors, pain in the uterus, &c. Leeches were applied, followed by poultices, and calomel and opium given internally. Under this treatment the symptoms subsided, and she was thought to be nearly well; but a few days afterwards she detected a tumour in the right iliac region, and I was requested to see her. I found the tumour as large as a large orange, extending from Poupart's ligament upwards and inwards towards the mesial line. Internally it could be felt on the right of the cervix uteri, and extending to the os pubis. It was painful and tender. Pulse 100; tongue

dry; thirst. Leeches were applied twice to the tumour, and poultices. Calomel and Dover's powder were given until the gums were affected; and under this treatment the tumour ceased to be painful and tender, and was reduced to one-third of its original size. The pulse came down to 90, and the tongue cleaned. The only complaint the patient made was of pain around the hip-bone and down the thigh, evidently arising from the pressure of the tumour upon the nerves passing under Poupart's ligament. Thus matters remained for ten days or a fortnight, when the abscess broke, and the matter was discharged per vaginam, with immediate relief of the tension and those symptoms which were the consequence of pressure.

The matter continued to escape in small quantities for three weeks; the tumour gradually disappearing. She suffered no pain, and scarcely any inconvenience. She can now stand upright, and walk about. The appetite and other functions are healthy.

CASE XV.—“In this case the patient caught cold during her accouchement, and immediately after felt a pain in the right iliac region, followed by tumefaction. The pain and swelling continued during the time she was in bed, but the pain increased after she became convalescent. On examination, M. Delamotte found the tumour tender and slightly red. Means were employed to produce suppuration, which took place in eight days. The abscess was opened, ‘deux pallettes’ of pus escaped, and in ten days the abscess was healed and the patient cured.”—(*Abridged from La Motte*, 1726, p. 670, Obs. 436).

CASE XVI.—“On the 28th of March, 1782, I was called to a patient who had been confined two months, and who had complained for a few days of a tumour in the lower belly, in the right iliac region. The pain was extreme, accompanied with fever and frequent faintings. At length matter formed, and the abscess was opened, and gave issue to ‘trois pallettes’ of matter, resembling the lees of red and white wine mixed. The suppuration continued for five weeks, and the tumour disap-

peared, and the patient recovered.”—(*Abridged from Mauriceau, 1728, vol. ii. p. 247, Obs. 299*).

CASE XVII.—“ A lady of the Faubourg St. Marceau, after an ordinary labour, continued as well as possible up to the eighth or tenth day. She then complained of pains in the belly, groin, and thigh, but no swelling was perceptible. Oil of almonds, lavements, and topical applications were employed, with venesection twice. Four or six weeks thus passed without relief, on the contrary, the fever increased, the leg and thigh became useless, and the pain in the groin increased. Upon examination, M. Puzos detected a hardness above the fold of the groin, not circumscribed, without elevation or redness of the skin. All means were used to procure resolution, but in vain; suppuration took place, and M. Boudon opened the abscess, from which a large quantity of matter escaped. The patient recovered, and has had several children since.”—(*From Puzos, p. 364*).

CASE XVIII.—“ The wife of a receiver-general of Finance, after a happy delivery, suffered from pains in the belly, with a troublesome tenesmus. All the means tried for her relief failed. After some time fever arose, and the pains became localized just above the right groin. Cataplasms and fomentations were employed, purgatives were given and quinine, without benefit. The thigh was drawn up, from the increase of the swelling. M. Puzos saw her after the attack had lasted five or six weeks, and attempted the resolution of the tumour, but without success. Suppuration took place, the abscess was opened, and in three months the patient was cured.”—(*From Puzos, p. 364*).

CASE XIX.—“ A lady of Provence came to Paris for a consultation, and saw MM. Petit, Boudon, and Puzos. They found a fistulous opening above, and a little on one side of the pubis. A sound could be passed very far into the hypogastrium. This fistula had resulted from an abscess after delivery, opened above a year before, and which all attempts had failed in healing. The physicians advised that the opening should be main-

tained, and the matter evacuated by a canula.”—(*From Puzos*, p. 365).

CASE XX.—“A woman, æt. 24, fair and delicate, though healthy, was delivered safely, though with difficulty, of her first child, May 6, 1840. Four days afterwards she had a rigor, followed by heat, and pain in the right inguinal region. The shivering, which was attributed to cold, was successfully treated by frictions with lard and sudorific drinks. As the patient became worse, a physician was summoned on the 14th. He applied leeches twice, followed by poultices, and exhibited mercury both internally and in frictions. No benefit resulting from this treatment, M. Löwenhardt was called in July 4, and found the patient in the following condition: the face very pale, thin, and profoundly altered; the right thigh retracted, flexed, and swollen at its superior extremity; the inguinal region of the same side likewise swollen, tense, and whitish, very tender, but without pulsation; the swelling being equally tense and hard, without softening in any part, without redness or elevation. The left inguinal region and the abdomen generally was tense, but not tender. The right thigh, flexed, as already stated, could not be straightened without pain and difficulty.

“On examination internally, the vagina was found almost destitute of moisture; the right side of the canal was swollen, and pressure against it increased the pain in the inguinal region. The ovary was easily reached with the finger introduced in the anus, and was swollen and painful.

“In addition to these symptoms, the patient was much emaciated, suffered from fever, with evening exacerbations, complete insomnia, profuse acid perspirations, with miliary eruption and diarrhœa. The secretion of milk was not entirely suppressed. There were no nervous symptoms, and the sensorial functions were intact.

“Leeches, mercurial frictions, and emollient applications, were again applied to the affected part, and Eau de Seltz and

milk given for drink. At a later period, bitter infusion with muriatic acid was given.

“ So matters continued until the 12th, when there appeared a small, red elevation just above the right horizontal ramus of the os pubis. At the same time the vaginal parietes were found more puffed, and the tumour felt through the rectum had enlarged. The patient suffered also from tenesmus. Judging that matter had formed, M. Löwenhardt plunged a bistoury deeply into the tumour, but nothing escaped but blood. On the 19th, there was difficulty in voiding urine, and the tenesmus was very distressing. A small quantity of pus escaped from the vagina, through an orifice in the tumefied portion. Again, M. Löwenhardt cut into the tumour, and, as the reporter says, reached the ovary, and gave exit to a large quantity of pus, which was increased when pressure was made upon the tumour by the finger in the vagina or rectum. Great relief followed, and the dysuria and tenesmus disappeared. The discharge ‘*per vaginam*’ continued until Aug. 4, and that through the abdominal parietes until the beginning of September, and by the 15th of September the cure was complete.”—(*From the Arch. Gen. de Med.*)

The critic in the Archives remarks very truly, that we have scarcely sufficient data in the above report to decide upon it being a case of suppuration of the ovary.

CASE XXI.—I was requested to examine a patient in the Meath Hospital. She had been admitted for a severe pain in the course of and limited to the sciatic nerve, and as this was her only complaint, she was treated for sciatica. Something occurred to excite a suspicion of deeper disease, and on being questioned, she mentioned that she had recently been confined.

A little closer investigation brought to light the fact, that after her confinement she had suffered from pain in the belly, for which leeches were applied, and as I knew that several cases of puerperal fever had occurred about the same time, I felt little doubt of the nature of her attack. I examined the abdomen most

carefully, and found a hard and tender swelling in the left iliac fossa, near to the brim of the pelvis: it was about the size of an egg, and immoveable, extending forwards to the part traversed by the great vessels and nerves. An internal examination detected this tumefaction, extending from the left side of the uterus to the bony pelvis, and pressure in this part gave much pain. The diagnosis was easy.

Leeches were applied on the tumour externally, succeeded by poultices. The swelling increased, and approached the surface, and after some time an obscure sensation of fluctuation was felt; in consequence of which, Mr. Porter cut down upon and opened the tumour, giving exit to a considerable quantity of purulent matter. From this time the patient rapidly recovered, the pain in the leg disappeared, and she was soon able to walk straight. There were no rigors.

CASE XXII.—As an example of the severest kind, I quote the following case:

“ Sarah Bryant, æt. 32, was delivered of her fifth child in the year 1834, previous to which time she enjoyed good health. About three weeks after her confinement, as near as she can recollect, she had an attack of pain in the region of the womb; after which her health gradually became impaired. A tumour, which subsequently proved to be a chronic abscess, formed in the left inguinal region, almost precisely in the situation of inguinal hernia. She was admitted into the Westminster Hospital, as a patient of Mr. Guthrie's, in September, 1837. At this time the emaciation had become extreme; there were numerous sinuses in connexion with the abscess, burrowing about the left hip. There was at this time no diarrhœa; in fact, she required occasional laxatives: the evacuations were passed with pain. The treatment was merely palliative; and she died completely worn out with pain, Oct. 11, 1837, about three years after her delivery.

“ *Dissection.*—The sigmoid flexure of the colon, the rectum, the uterus, and the bladder were closely matted to each

other in the left side of the pelvic cavity, through the medium of old adhesions. The lower part of the colon was also adherent to the parietes in the right iliac fossa, and closely corresponded to one of the sinuses of the abscess. The abscesses were found to be limited to the left side of the pelvis and lumbar region, and had burrowed extensively over the surface of the ilium and lower false ribs, the surfaces of both of which were extensively denuded of periosteum.”—(*From Med. Gaz.*, vol. xxv.)

I am indebted to Dr. Shannon, Surgeon to the South Union Workhouse, for the following case :

“CASE XXIII.—Anne Finigan, aged 43 years, was confined of her fourth child in the Lying-in Hospital, after which (she states) she was attacked with cramps in her legs and thighs, extending to the abdomen, for which she was twice leeches and mercurialized, and in one month from the time of her confinement she left the hospital quite well, but very weak. The night of the day she left the hospital she was compelled to sleep on bare boards, and was exposed to much hardship; three days after which, she had a severe rigor, and next morning perceived a tumour in the lower part of the abdomen, which gradually increased to the time of her admission into the hospital of the South Dublin Union Workhouse, which did not take place till nine days after the first appearance of the lump.

“March 16. The tumour now feels as large as the head of a full grown foetus, occupying the hypogastric and left iliac regions, and extending half way between the symphysis pubis and right anterior superior spinous process of the ilium. It is very painful on the slightest pressure, feels very hard, and is fixed; the integuments are unchanged, and perfectly moveable over the tumour. She has night sweats; great pain in passing water; and a profuse white discharge from the vagina; scarcely any milk; thirst; pulse 90; very weak. Ordered six leeches and a large poultice to the tumour; fomentations, some saline mixture, and light nutriment.

“March 17. Pain in tumour rather less; feels very weak.

“ No report till March 26. Last night she had a rigor, and a severe pain in the left side of the chest. Had a mustard cataplasm immediately applied, which gave her no relief. There is decided dulness, with feeble respiration, over the part; pulse 100; very weak; furred tongue; a remarkably sunken countenance. She had the sinapism repeated, and took two grains of carbonate of ammonia, with one of blue pill, every fourth hour.

“ March 27th. Pain in side not better; dulness increased, with crepitus; slight expectoration; cough. Pills to be repeated (with half a grain of hippo and one grain of Dover's powder added) every third hour; to have a large blister; afterwards to be dressed with mercurial ointment.

“ 28th. Complained that her gums were sore. She says that the pain in her side is quite gone; cough not so troublesome; expectoration not less; her blistered surface to be dressed with simple ointment; to take her pill every sixth hour. Can take a little arrowroot.

“ 29th. Feels nearly quite relieved from the chest affection. The tumour in abdomen appears rather larger; the integuments are becoming adherent; she passes water freely, and without pain. The discharge has altogether ceased; tongue cleaning; pulse 90. She has been endeavouring to suckle her infant contrary to advice; however she has evidently much more milk than she had a week ago. To have nourishment; and an expectorant, containing carbonate of ammonia and hippo wine.

“ April 13. The tumour has rather increased since last report. There is now a dark-coloured blush on the lower and middle part, without any appearance of pointing. The integuments being perfectly adherent in this part, I made a small opening, and discharged a large quantity of dark-coloured matter, leaving a large cavity, in which I could move about a director. She was ordered bark, meat, and porter, on which she rapidly improved in her general health. The opening continued to discharge a small quantity of matter every day, till the

seventh or eighth, when it become quite closed, leaving a little surrounding hardness, for which she was ordered some camphor liniment.

May. She now leaves the hospital, evidently growing fat, with a fair quantity of suck for her infant; three weeks from the opening of the abscess, and eight from the commencement of the tumour."

The foregoing twenty-three cases afford a very good illustration of the disease to which I have drawn your attention. I do not doubt that many more might be collected from authentic sources already before the public, and I am certain that still more will be the reward of the patience and observation now employed in the investigation of this class of diseases. My object will be fully answered if I succeed in exciting the attention of the members of this Society, and obtain from them the results of their experience. I shall now adduce a few practical inferences mainly from the cases already related.

1. Inflammation of the uterine appendages may occur in an acute or chronic form. In the former, it constitutes one of the varieties of puerperal fever, and has been most ably treated by Clarke, Lee, Fergusson, Puzos, Husson, Dance, Tonnellè, &c. The latter author found fifty-eight cases of ovarian inflammation and four of abscess, in 190 cases of puerperal fever. Dr. Lee states, that in one case the ovary "appeared to be converted into a large cyst containing pus, which had contracted adhesions with the abdominal parietes, and discharged its contents externally through an ulcerated opening. In another case, which proved fatal, the inflamed uterine appendages agglutinated together, had contracted adhesions with the peritoneum at the brim of the pelvis, the inflammation having extended to the cellular membrane exterior to the peritoneum, and occasioned an extensive collection of pus in the course of the psoas and iliacus

externus muscles, similar to what takes place in lumbar abscess.”*

As to the symptoms of this acute disease, Dr. Lee briefly remarks,—“The pain is generally less acute than in peritonitis, and is principally seated in one or other of the iliac fossæ, extending from them to the loins, anus, and thighs. On pressure, the morbid sensibility will be found to exist chiefly in the lateral parts of the hypogastrium. The constitutional symptoms at the commencement of the attack do not materially differ from those which mark the accession of peritonitis, being often accompanied with strong febrile action, which speedily subsides, and is suddenly followed by prostration of strength and other changes, which characterize inflammation of the muscular and mucous tissues of the uterus.” Dr. Lee details eight cases of the disease which proved fatal.

It is not my object to enter further upon the consideration of the acute form of the affection, but immediately to proceed to notice the CHRONIC DISEASE.

It has been described, as I have said, by several authors under different names. Puzos calls these abscesses “*depôts du lait*,” or “*depôt laiteux dans l’hypogastre* ;” and Levret, “*engourdissemens laiteux dans le Bassin* ;” from an erroneous supposition that they were caused by metastasis of the milk to these parts.

The disease described by my friend Dr. Doherty is essentially the same as the one under consideration, but occurring in general at an earlier period after delivery ; differing very little in symptoms, but terminating more favourably, that is, in resolution. It appears altogether a simpler affection, quicker in its course, and much more manageable under similar treatment. Without occupying your time by extracts from his excellent paper, which is now before the public, I shall just refer to it as we proceed.

* “On more important Diseases of Women,” p. 25.

2. Chronic inflammation of the uterine appendages may occur, though rarely, independently of pregnancy or labour (Cases I. II.), but far more frequently after labour, and at varying intervals: the first intimations being perceived in some cases (Cases IV. VI. VII. VIII. X. XI. XIV. XV. XVII. XXIII.) from three to ten days after delivery, and in others not until the lapse of some weeks (Cases III. V. XII. XVI. XXII.)

3. *Causes.*—It is very difficult to assign any special *cause* for the attack. It may follow blows, falls, or a fright; or more frequently result from cold.

From the coincident suppression of the milk or the lochia* it is sometimes attributed to either accident.

That it may occur in consequence of the long-continued pressure of the child's head in lingering labour I do not doubt, but it is evident that this is not a frequent cause, as most of the cases occurred after natural labour.

Lastly, it may be the termination of acute inflammation.

4. *Invasion.*—The mode of invasion varies a good deal.

a. In certain cases (Case XI.) there are few, if any, preliminary symptoms; uneasiness perhaps, but not amounting to pain, in one iliac region, and upon placing her hand on the spot, the patient detects a tumour.

b. Or, after a favourable convalescence for some days, just as the usual term of our attendance expires, the patient experiences a slight febrile attack, with some shooting pains in the abdomen, which subside after a time, though the fever remains without any apparent cause, until, in the course of time, the disease is developed. (Cases IV. VI. XVII.)

c. Again, in other cases, the attack is local, and its nature pretty evident; from the beginning there is pain in one or other iliac region, tenderness, and shortly after, tumefaction, with fever.

d. Lastly, the affection may at first assume the character of a more general affection of the peritoneum, the pain extending

* Mauriceau, vol. ii. p. 249.

over the abdomen, occurring mainly in paroxysms, with tenderness on pressure, and fever, but by and by, the general tenderness and extended pain subsides, and becomes localized, by which the character of the attack is determined. (Cases XIV. XXIII.)

5. *Symptoms.*—Having briefly alluded to the various modes in which the disease commences, I prefer taking the symptoms in the order of their importance and prevalence, rather than in that of succession.

a. The presence of tumefaction, or of a distinct tumour, is invariable; it occurs in all cases, and characterizes the disease. It may be found completely above Poupart's ligament, above the linea ilio-pectinea, sometimes occupying one iliac fossa entirely, and even extending upwards nearly to the umbilicus, and forwards to the linea alba. (Cases V. XI. XIV.)

Or it may be situated more deeply in the pelvis, just reaching to Poupart's ligament, protruding the groin, and from its fixedness giving the impression of its being firmly connected with these parts. (Cases VIII. X. XX. XXI.) In the former case the tumour is larger, more defined, and far more moveable: in the latter it is rather undefined, immoveable, and more painful. In both it is equally hard, in fact as hard as stone, until suppuration commences, and equally tender on pressure. If a vaginal examination be made, in the former case, we do not always discover any change; the vagina may be cool, no tumefaction may be detected, and movement of the uterus may occasion but little pain. But in the latter cases, and also in the former when the inflammation is much diffused, the vagina is hot, somewhat tender; and at one of its sides, or at its upper part, in the "cul de sac" on one side of the cervix uteri, a hard, painful swelling is observed, evidently connected with the tumour in the groin, and in these cases the uterus cannot be moved without acute pain.

b. Although it may be developed at different periods, yet sooner or later, pain is an accompaniment of the disease. It maintains, as it were, its seat in the tumour, from whence stings

of pain radiate in all directions. When the tumour is high, that is, above the brim of the pelvis, the pain is more limited to the tumour: when situated in the pelvis and groin, it extends across that cavity, down to the anus, to the back, and down the thigh. In these cases it is almost always difficult, in some cases quite impossible, to straighten the thigh, so as to stand upright. Walking, too, is both difficult and painful.

c. In these latter cases also, when the tumour occupies a portion of the pelvic cavity, we often find the patient distressed by tenesmus, and a desire to make water frequently the consequence, probably, of an extension of the irritation to the bladder and rectum. Occasionally, when the tumour is large, it offers a mechanical improvement to the functions of these viscerae, and the patient may suffer from dysuria, or be unable to evacuate the intestinal canal.

d. The amount of fever, as well as the time of its setting in, varies. In some cases it precedes or accompanies the first local symptoms: in others it supervenes after the tumour has been detected some time. In a few cases it is almost confined to the evening, and during the process of suppuration there are, in almost all cases, evening exacerbations.

The pulse ranges from 90 to 110; the tongue is loaded, the skin hot, the thirst considerable, and the urine high coloured. The appetite is always bad.

These symptoms are somewhat mitigated, or at least the patient suffers less in cases not connected with parturition.

6. *Terminations.*—After being fully developed, and running on even for a considerable time, the disease may terminate:

A. In resolution.—This most frequently occurs with cases in which the tumour is above the brim, and limited in extent; and in such we find the pain diminishing, and ultimately ceasing, the tumour first becoming less tender, then less in size, until at length it disappears. This process will occupy from one to three months. (Cases III. IV. V. VI. VII. VIII.)

B. In abscess.—When suppuration takes place we can ge-

nerally feel a degree of softening, with an obscure sense of fluctuation in the tumour either externally or internally; the patient complains of more throbbing, and occasionally of rigors, and by degrees (if not anticipated) the coverings are thinned, and the matter may escape—

a. Externally, through the abdominal parietes covering the tumour. (Cases X. XI.)

b. Into the peritoneum, where it gives rise to peritonitis, always alarming, but not always fatal. (Cases IX. XII. XIII.)

c. Into the vagina, through which the matter escapes. (Cases XII. XIV.)

d. Into the bladder* or intestinal canal, and especially the rectum,† with evacuation of matter per stool. (Cases I. II.)

e. Into the surrounding cellular tissue, where it may burrow until it finds an outlet. (Cases XIX. XXII.)

The matter may be evacuated by any of these “ routes ;” and if the opening be sufficiently large, the sac may be emptied and the abscess fill up and heal. But if the opening be small, the discharge may continue for an indefinite length of time, the opening remaining fistulous, and the cure being proportionably difficult. (Case XIX.)

f. Lastly. The extent of the disease, or the secondary affections caused by it, may prove fatal after an indefinite time.

7. *Diagnosis.*—A good deal of light will be thrown upon the diagnosis, when the disease occurs within a reasonable time after parturition, and especially when the patient has suffered from abdominal pain: in such cases if we discover a tumour in one of the illiac fossæ, with tenderness and pain, we shall have adequate grounds for diagnosing this affection.

If, however, the attack occur independently of child-bearing, or at a considerable interval afterwards, there may be difficulty in distinguishing between it and some of the chronic organic diseases of the ovary, especially when the tumour is above the

* Boivin and Dugè's “ Diseases of the Uterus,” page 578. Trans.

† Ibid.

pelvic brim: our safest guide, probably, will be the amount of pain and constitutional disturbance, which is much greater in the disease I have been describing.

I have known this affection mistaken for sciatica; and when the tumefaction is mainly confined to the pelvis, and pressure is made upon the nerves issuing from that cavity, the pain may be limited to the track of the nerves, so as to deceive any but a careful observer. However, a minute investigation will probably enable us to trace the pain into the pelvis, and then an external and especially an internal examination will at once reveal the cause of the pain.

The flexion of the thigh, which alone might also mislead, will of itself lead to an examination of the groin, and so to the detection of the tumour.

8. *Treatment*.—The indications of cure are 1, to procure resolution of the tumefaction; or 2, to promote suppuration and evacuation of the matter.

1. If we are called in at an early period of the attack, it is often possible to arrest its progress, as has been well remarked by Dr. Doherty; nay, even where the disease has lasted some time, as in the cases I have quoted from Puzos, it is in some cases quite possible to procure resolution. For this purpose Mauriceau,* and the author just named, advises repeated venesection, with purgatives, alteratives, absorbents, &c. I believe that the repeated application of leeches will be found more effectual at less expense of strength. A dozen should be applied over the tumour, followed by bran poultices, and repeated if necessary, i. e. if the pain and throbbing be not relieved. If we succeed in arresting the progress of the inflammation, a succession of small blisters will be of great use. Fomentations, and an occasional hip-bath, also afford great relief to the patient; but still more comfort is derived from vaginal injections of warm water twice a day.

Internally, we may exhibit mercury in small doses, perhaps

* Mauriceau, vol. ii. p. 248.

even so far as to effect the gums, and an occasional purgative ; but I confess I am not convinced that brisk purgation is beneficial. In some cases I am certain that it increases the pain. If the pain prevent sleep an opiate may be given.

When the disease shows signs of yielding, I have seen benefit derived from an application of the empl. hydrargyri. The diet should be bland and nutritious, but unstimulating.

2. If, however, notwithstanding the prompt and sedulous use of the means I have indicated, the disease should not yield, we may be sure that suppuration will take place ; and our object then will be to promote this by fomentations and poultices constantly applied.

The formation of matter will sometimes be indicated by rigors, but in many cases it is by the touch only that we can recognize this occurrence. I cannot too strongly impress upon you the advantage of making an opening into the abscess when it is possible, and so deciding the course which the matter is to take, instead of leaving it to burrow and make an opening in some dangerous situation.

The best situation for the opening is through the abdominal parietes ; the next, through the vagina. If from the high situation and mobility of the tumour, we fear that, when opened, the matter may escape into the peritoneal cavity, we might adopt the plan so successfully practised in abscess of the liver by Dr. Graves, and cut down to, but not through, the parietal peritoneum, and then apply poultices, with little doubt but that the matter will ultimately make its appearance through the wound.

Should the abscess open spontaneously, we must counteract as well as possible any unpleasant consequences which may result ; but whether opened spontaneously or by the knife we must endeavour to empty the sac, and to secure a free exit for the matter as it is secreted, by which means we shall avoid the

* Mauriceau, vol. ii. p. 250.

prolongation of the disease, and all the distress of a fistulous communication.

When the matter has been fairly evacuated, the diet must be generous, and a full share of wine or porter allowed.

ART. II.—*On Puerperal Convulsions*. By CHARLES HALPIN, M. D., Cavan, Licentiate of the King and Queen's College of Physicians, and of the Royal College of Surgeons, Ireland ; Corresponding Member of the Association, &c.

[Read at a Meeting of the Association, August 6, 1843.]

THERE is no branch of the medical profession so fraught with difficulties and dangers as midwifery. There is none so laborious in practice, so uncertain in its results, or so dangerous, not only to the lives of the individuals who come under our care but also to our own characters as medical practitioners. In the puerperal state more than any other, we meet with difficulties and complications which, from their urgent nature, will not permit us the benefit of a consultation, and which will call forth the exercise of the soundest judgment, and most prompt decision at a moment's warning.

Various and dangerous as the complications of the parturient state are, there is none that creates the same degree of alarm in the friends of the patient, or requires greater decision, or more matured judgment on the part of the medical attendant than puerperal convulsions. Sudden in its accession, frightful in its career, and destructive in its results, it behoves us to be ever watchful of its approach, and prompt and vigorous in our treatment of it.

A disease attended with symptoms so violent and alarming must have attracted attention at a very early period of the history of medicine. We find mention made of it by Celsus ; and *Ætius*, who wrote in the fourth or fifth century, describes it particularly ; from this period its nature has been investigated with the most unwearied diligence by the ablest practical men ; and

the universal confession of those best acquainted with the subject is, that so great is our ignorance of its physiology and pathology, that it still presents a vast field for inquiry ; and, as Dr. Collins, in his valuable treatise on Practical Midwifery, remarks, “ the extent of the experience of most individuals is not sufficient to enable them to draw satisfactory conclusions, therefore every contribution is beneficial.”

Deeply impressed with the truth of this remark, I feel it my duty on this occasion to present you with the result of my observations on this disease : and this urges itself on me more strongly, as within a short period I have been in attendance on a most critical and alarming case of this kind.

Puerperal convulsions have been divided by most authors into three species—epileptical, apoplectical, and hysterical : of these the epileptical is most frequently met with. Again, it is extremely useful for practical purposes to consider them as they occur at *three* different periods, viz. during the latter months of gestation ; during labour ; and after delivery.

An attack of convulsions may set in at a time, when from the favourable condition of the woman, both as regards her general health, and the relations of the various circumstances connected with the period of her gestation or labour, we have the least reason to expect such an occurrence at hand. Every thing may be progressing to our satisfaction, when suddenly, and without a moment's warning, a scream, or some stertorous or hissing sound from the woman attracts our attention. On turning round we find her in a state of insensibility ; if she has been standing or sitting previously, she has fallen to the ground. Her body becomes violently agitated ; the whole muscular system is forcibly and irregularly contracted ; the hands are firmly clenched ; the arms and limbs are flung wildly around, or rigidly extended ; frequently the heels coming in contact with some fixed point during those rigid extensions, the patient will force herself into an erect position, supported by the arms of those around her ; the head is drawn violently backward, and the neck twisted so,

that frequently the face, which appears swollen, is turned toward either shoulder; the eye-balls are projected, they are either fixed with an appalling stare, or rolling wildly, appear ready to start from their sockets; the cheeks and lips are red or livid; the tongue is protruded from the mouth, which is filled with frothy mucus, frequently tinged with blood from the lacerated tongue. The vessels of the head and neck, particularly the veins, are swollen and turgid; whilst the breathing, which is very imperfectly and laboriously carried on, is accompanied either by stertor, or a very peculiar hissing sound. The pulse may be either full, slow, and soft, or extremely rapid, frequently intermitting.

This convulsive seizure usually subsides in a few moments, and the patient may either recover from it quietly, as from a sleep; or she will appear agitated and frightened, tossing restlessly from one side of the bed to the other; or she may lie in profound coma for hours, or even days; but perfect consciousness rarely returns for a considerable time after the subsidence of an attack. But however the fit terminates, the state of comparative calm that succeeds it, is very seldom of long duration; another, and other fits most commonly follow each other at intervals more or less prolonged, attended by the same appalling symptoms. "And thus," says Dr. Ramsbotham, "do paroxysms and intervals alternate at nearly regular periods, until permanent relief is procured by means of art, or until the powers of the system are worn out by the numerous repetitions;" or it may terminate at once in fatal apoplexy.

The *epileptic* species of convulsions occur fifty times for once that either of the other species are met with. It resembles epilepsy in the outward symptoms, but differs most considerably from it in most other particulars.

It must be obvious, that our first duty is to prevent, if possible, the occurrence of a state of disease so highly alarming and dangerous; and there can be little doubt but that an attack might frequently be warded off by the timely interference of art,

had we any *decided* symptoms premonitory of its approach to guide us. All the authors that I have been able to consult have given long catalogues of premonitory symptoms; but there is not one that is *peculiar* to this disease: nor can even the grouping of the whole of them together be relied upon as a *certain* indication, that an attack is at hand.

The most prominent of those symptoms are, rigors; tremors; shudderings; crampy pains in the region of the stomach; flushings; tumidity of the face, hands and neck (Osiander); throbbing of the carotid arteries; giddiness: sense of weight in the head; ringing in the ears; headach, which is sometimes dreadful; severe and splitting pains in the head; dazzling appearances, or motes before the eyes; dimness of vision; drowsiness; vertigo. If the woman be in labour, there is pain in, and insupportable sickness of the stomach; and great drowsiness, even heavy sleep during labour pains. Now it is indisputable that most of those symptoms are observed in persons who have *never* been attacked with convulsions; yet, when they occur, especially the *splitting pain in the head*, with bright flashings before the eyes, we should be particularly watchful.

From what has been said of the symptoms which characterize a convulsive seizure, and also those premonitory of its approach, it would appear that the functions of the brain and nervous system are greatly deranged; and this condition is associated with, or the result of, an irritable state of the uterus, connected with pregnancy. Some of the more immediate causes appear to be eating indigestible or improper food, particularly shell-fish, as observed by Dr. Clarke and others; morbid secretions in the alimentary canal; a loaded state of the intestines; distention of the urinary bladder; tedious, long continued, and laborious labour; grief; anxiety and distress of mind; a sense of shame, and fear of detection in unmarried women. It has been observed by Smellie, Denman, Burns, Ramsbotham, Dewees, Copland, Collins, and many other writers on the subject, that several cases have occurred about the

same time, and that during a warm, electrical state of the atmosphere. I think I am borne out in saying, that an advanced stage of life in a first pregnancy has much to do with the occurrence of this disease. This may arise from tedious or laborious labour, consequent on a more unyielding state of the parts concerned in parturition. Dr. Collins gives thirty cases, of which six were over 28 years of age. Ramsbotham details twenty-six cases: three of these women were "middle aged," one was 34, one 39, and one 40 years old; of the remaining seventeen no mention is made of age. Surgeon Enright of Ennis, in a valuable communication on this subject, published in the *Medical Press*, No. 55, gives four cases: No. 1, 26 years, No. 2, 35 years, and No. 3 was 40 years old. Three were first pregnancies; no mention is made of the fourth. It is much to be regretted that the age of each patient is not stated in published cases. No case is perfect in which this important omission is made; were this attended to by writers on this disease we should be enabled to form such a set of tables as in all probability would throw much additional light on this important, but obscure subject. From what I have been able to glean from the sources I have consulted, I would say, that about one-fourth of the cases occur in women over 28 years of age. Denman and some others lay much stress on the pressure of the hard head of the foetus on the neck and mouth of the uterus, as being a most powerful exciting cause of puerperal convulsions. This may have some truth in it; and the opinion is strengthened by the fact, that in almost every case the *head* is the presenting part. Opposed to this is the fact, that we find many persons attacked in whom the os uteri is fully dilated, and in whom the external parts are soft and yielding, and well prepared for parturition.

No woman is safe from this disease: slight made women are not exempt from it, though it has been observed more frequently in those of a corpulent, robust, plethoric habit, with short thick necks. They rarely occur in those who have borne a child or children. In thirty cases, Dr. Collins states, twenty-nine were

first pregnancies. Dr. Ramsbotham is the only writer with whom I am acquainted that maintains an opposite opinion. The presentation is almost invariably natural. Dr. Collins states, that during the masterships of Drs. Clarke, Labatt, and himself in the Dublin Lying-in Hospital, a period of twenty-one years, and recording the parturition of 48,379 women, there was but one case of puerperal convulsions in which the presentation was preternatural.

It would naturally be expected that a disease so violent in its symptoms, so rapid in its career, and so destructive in its results, would leave indelible traces of its ravages upon and within those organs in which it had been running riot so furiously. In this expectation we are frequently disappointed, and post mortem examinations of those who have died of this disease have thrown little light on its pathology. The appearances of the brain are most frequently inadequate to account for the violence of the disease. *Occasionally* there is increased vascularity and turgescence of the vessels, with effusion of blood into the substance of the brain or into the ventricles; but in the greater number of cases that have been inspected no effusion of blood was observable in either situation. *There* may be serous effusion into the ventricles and between the coverings of the brain, particularly at its base, or in the theca of the spinal cord. This is usually very slight; rarely more abundant than in a healthy state of the organ; and even these appearances, slight as they are, are by no means constant, and the brain may present no appreciable trace of morbid action.

We rarely find any trace of lesion in the uterus or its appendages. Dr. Collins found the vagina lacerated in three cases out of five that proved fatal in his practice.

Puerperal convulsions may come on, 1st, during the latter months of gestation; 2ndly, during the progress of parturition; or 3rdly, after this process is accomplished. They are *always* fraught with danger to the mother; if before delivery is effected, the child also runs great risk of perishing. Whatever the pe-

riod of their occurrence may be, the general indications in the treatment are the same. Namely, to subdue the fit and prevent its return. In employing means for this purpose, we must be prompt, vigorous, and bold.

The first measure to be had recourse to in an attack of the epileptic variety of puerperal convulsions is to bleed the patient largely. All authors are agreed in the necessity for this. Bleeding, to be effectual in this disease, must be carried to a large extent: from twenty to forty ounces should be taken at the first bleeding, and repeated to half the quantity or more, should circumstances require it. Copious abstraction of blood in this disease is borne extremely well, and it is a powerful means in preventing inflammation of the peritoneum and uterus and its appendages, which is but too prone to spring up, where bleeding has been neglected or inefficiently performed. Dr. Rambotham recommends "free and copious loss of blood." Dr. Burns says, "We must not spare the lancet; frequently there is more danger from taking too small a quantity than from copious depletion." Dr. Blundell "once abstracted seventy ounces from a patient in the course of three or four hours, and she did not ultimately suffer from inanition." Dr. Dewees "bleeds until he abates the severity of the fits, or until he arrests their repetition. This might be effected sometimes by thirty or forty ounces suddenly drawn; but it may require upwards of 100 ounces in the course of a few hours."

Much depends on the *manner* in which this blood-letting is effected. It should be taken rapidly either from the jugular vein, from one or both arms, or from the temporal artery: the orifice in the vein should be large, to permit a free stream of blood to escape, so that a powerful and *sudden* effect may be produced on the system. Dr. Dewees lays it down—"that the shorter the time a given quantity of blood be drawn in, the greater will be the advantage resulting from it."

Again, bleeding should be had recourse to early. It is of the highest importance that we should lose no time in trying the

effect of less active measures, but proceed at once to bleed: this having been performed fully and boldly, we shall have time to consider what other means are most likely to be beneficial.

Our attention should next be directed to the state of the bowels, and we should administer some purgative medicine that will unload the alimentary canal, clearing away any crudities or morbid matter that may be contained in it. This may be done with a dose of calomel, from ten to fifteen grains, given alone, or combined with jalap, camphor, or croton oil. If the patient cannot swallow freely between the fits, this may be mixed with a little treacle or butter, and laid on the tongue with the handle of a spoon. When the patient can swallow, the common purgative dose of senna and salts, given in sufficient quantity, will be found to answer extremely well. Should these purgatives prove slow in their effect, we should assist them by throwing a stimulating enema, containing turpentine, or tincture of jalap, or foetid tincture into the rectum.

Pouring cold water on the head has been strongly recommended. Denman sprinkled it on the head with a bunch of feathers; others recommend dashing it forcibly on the head, face, and breast. Copland speaks highly of "the effusion of a stream of cold water, with the use of injections of turpentine, sometimes containing camphor, valerian, &c." Whatever mode we adopt, provided we are not sparing in our application of it, cold applied to the head will be found a most powerful auxiliary; it is always within our reach, and, after a full bleeding, it can be used without interfering with other and more important remedies.

These means will very frequently succeed in staying the progress of this frightful disease, and the woman may go on to her full time, and be delivered without a further recurrence of them: or if they come on during the progress of labour, she may be delivered by natural efforts: but unfortunately we are not always successful, and the convulsive seizures will continue unmitigated in violence—unabated in frequency.

This disease being so manifestly depending on the condition of the uterus, we must next consider on the propriety of delivery. This is a measure most desirable to accomplish in all cases occurring during the progress of labour, as we find that after the expulsion of the ovum by natural efforts, or its extraction by art, the convulsions most frequently cease of themselves. But this is a point that requires great judgment to direct; for whilst there are many cases that seem to invite assistance, there are others that forbid it, and in which injudicious manual interference with the uterus would be followed by the most disastrous consequences.

This is a point on which there appears to be great difference of opinion amongst practitioners. A long list of names might be adduced that are opposed to delivery; whilst again, the advocates for it are equally numerous and respectable. "And yet," as Copland observes, "this difference is more in words than in intention." There appears to be an entire agreement between them, that should the fits continue notwithstanding the active employment of the means enumerated, the woman should be delivered as early as the *state of the parts* will admit its being done *without violence*; that is to say, when the external parts and vagina are soft and well prepared, and the os uteri dilated to the full extent, or so soft and yielding to the gentle pressure of the fingers as to be easily dilated. Under these circumstances we may proceed to deliver with safety. The method to be preferred must be regulated, in a great measure, by the stage of labour present; in other words, by the situation of the foetal head. If the head has not yet got into the pelvis, we may pass the hand cautiously and gently through the os uteri, and seize one or both feet of the child, and proceed to deliver as in footling cases. In this way its life may be saved. If the head is fairly in the pelvis, the forceps should be tried, and delivery accelerated: and lastly, where neither turning, nor the forceps, or vectis, are advisable, the head should be lessened with the derforator, and either the child extracted immediately, or the

completion of the delivery may be postponed for some time, in order to permit the uterine action to compress the broken up head, when it may be accomplished with greater ease and safety. Where the child is dead in utero, and where the head can be easily reached, I would prefer lessening it, to either the application of the forceps, or *turning*, which latter, according to Dr. Collins's experience and researches, is followed by bad consequences, as five have died out of every seven on whom it has been practised.

In determining this point, the life or death of the foetus, the stethoscope will be found of immense importance.

These are the circumstances under which delivery has been advised. On the other hand, it is strongly deprecated by all who have studied the subject where the os uteri is not dilated ; or where, from its rigidity, it would require force to dilate it. Where this rigidity of the os uteri, or the unyielding state of the external parts is such that delivery cannot be attempted, then we must be patient and watchful. Here we are advised to rupture the membranes, and permit the escape of the liquor amnii, a measure that relieves the great distention of the uterus, and by which efficient labour pains are frequently induced.

We must never be idle spectators: it is expected that we shall still be employing some remedy. Accordingly we find that a great variety have been recommended, as leeches to the temples and behind the ears ; blisters to the head and neck, and calves of the legs ; anti-spasmodics, as musk, valerian, camphor, foetid gum, &c. ; warm baths, opium, and TARTAR EMETIC. I believe the Profession is indebted to Dr. Collins for the introduction of this remedy into practice in these cases: he has found it eminently useful. I have had an opportunity of seeing its merits fully tried by him in the Dublin Lying-in Hospital, and am convinced of its great power in controlling the violence and checking the recurrence of the convulsive seizures. He says :

“ In every severe instance of convulsions, after *bleeding*

freely, acting briskly on the bowels with calomel and jalap, I endeavoured to bring her under the influence of *tartar emetic*, so as to nauseate effectually, without vomiting. With this view a table spoonful of the following mixture was given every half hour :

℞. Aquæ pulegii ℥iij.
Tartaris emetici, gr. viii.
Tincturæ opii, gtt. xxx.
Syrupi simplicis ℥ii. ʒ.

The quantity of the emetic tartar was increased or diminished according to the urgency of the symptoms and the strength of the patient."

This is a remedy of the highest value in those slow, tedious cases, where the rigidity of the os uteri prevents the introduction of the hand into the womb, and delivery cannot be accelerated.

In cases of this kind, an ointment composed of extract of belladonna and lard, has been applied to the mouth of the womb by Chaussier. Van Swieten advised an incision through the unyielding margin of the os uteri, and several modern writers consider it perfectly justifiable after the other means usually employed had been tried without success. I believe, from what I have seen of the effects of tartar emetic, that if it be steadily administered, as advised by Dr. Collins, we shall never be driven to the extremity of making an incision through the mouth of the uterus.

Dr. Collins speaks highly of the use of *opium*, which is condemned by most writers on Midwifery: "He has found it *highly beneficial* in those cases where the fits *continue after delivery*." I have exhibited it in one case of this kind with most salutary effects.

The following case of this disease, still further complicated with twins, illustrates the circumstances under which delivery is loudly called for, and in which it may be effected with safety; I have reserved it for this place, as it further shows the state in which *opium* may be administered with advantage.

On the 21st of last March I was sent for to the house of a gentleman, on whose wife, then in her confinement, I was in attendance, to see C——— L———. She was a woman of full habit, 28 years of age, married ten months; she was in labour of her first child. She had had slight labour pains for the last two days, with dribbling away of the waters. She was very large; the belly very pendulous to the left side. On examination, I found the external parts soft, moist, and yielding; the os uteri dilated; the presentation natural; the head partly in the pelvis. The labour pains, occurring at intervals of about ten minutes, were very trifling, and did not seem to act on the fœtus at all. She was troubled with constant vomiting, or gulping up mouthfulls of yellow, bilious matter; the action of the abdominal muscles appeared to urge the head forward, but on the cessation of the vomiting, it receded again. Pulse 76; bowels freely acted on by medicine during the night. Made water freely. With the assistance of the stethoscope I ascertained that she was pregnant of twins.

As there was nothing here that required interference, I directed that she should be kept quiet, as efficient labour would, in all probability, soon set in. After a short time I was sent for to return to the lady I had left, she having had an accession of febrile symptoms that alarmed her friends. Having enjoined that she should be kept in a state of perfect quietude, I left her, and returned in an hour, when I found the household in a state of terror and alarm, crowded into the woman's room, all endeavouring in vain to hold her down on the floor, where she lay in violent convulsions. She had been in this state for about ten minutes. I instantly opened a vein in her arm, and bled her to forty ounces; this abated the violence of the fit, but consciousness did not return.

Having apprized her husband of the great danger she was in, and also of the necessity for delivering her instantly, I replaced her in bed, lessened the head of the first child, and extracted it. I then introduced my hand into the uterus, and

seizing both feet of the second child, turned it, and delivered it alive: there being then no uterine action to expel the placenta, I introduced my hand a second time, and brought them away. A tight binder, with folded napkins placed over the uterus, was next put on. The crying of the child roused her, and she spoke collectedly for some minutes, expressing great relief and comfort. Suddenly the fit returned: she screamed in a frightful manner for about a minute, and then became most violently agitated. I took the ribbon from her arm, and allowed thirty ounces of blood to escape rapidly. Cold water was dashed forcibly over her head, face, and chest. This fit lasted but six minutes, and was followed by a state of great excitement and agitation. This state of excitement continuing, at the end of an hour I gave her a large glass of Port wine, with sixty drops of laudanum. She became composed, and slept for four hours very tranquilly. The wine, with thirty drops of laudanum, was repeated, and she slept comfortably until the next morning.

In this case the attack was brought on by the improper conduct of the midwife, who, contrary to my injunctions, immediately on my leaving the house, took the patient out of bed, and was exercising her, by walking her through the room on her knees. She was thus employed when the fit seized her.

The violence of the convulsions; the presence of *twins* in the uterus; the *inefficiency* of the labour pains to expel the contents of the uterus; but above all, the *perfect preparedness* of all the parts, demanded that delivery should be immediately accomplished. There was little difficulty in turning and extracting the second child. The recovery of this woman was slow, but complete. She is now perfectly well, as is her child. She was not aware of having had a second child for three months after her confinement.

It has been asserted on high authority, that when puerperal convulsions come on after delivery, or where they continue after this is accomplished, they are more fatal than when they occur either before labour or during its progress. Dr. Collins dis-

sents from this opinion, and adduces cases to support his view. When they continue after parturition, if the patient has been previously bled, he seldom advises a repetition of it, but depends on the free use of tart. antimonii, with opium, which almost invariably subdue the fits. Where bleeding has not been performed, he commences with a full bleeding, and then exhibits the tart emetic mixture.

Puerperal convulsions also occur in the latter months of gestation. They may be preceded by the symptoms already detailed, or may come on without any previous warning. Whenever we have reason to suspect their approach we should abstract blood from the system, and purge the patient briskly. Most usually the bowels will be found constipated,—difficult to act upon,—therefore we must give such cathartics as will empty the alimentary canal effectually. The same treatment must be adhered to until the disease is subdued. We must not be officious in our examinations, as irritating the parts frequently aggravates all the bad symptoms. Still must we be very watchful of our patient, as labour may come on suddenly, and children have been expelled and lost, through neglect of proper precaution, which might otherwise have been saved; and more than one mother has lost her life for want of that watchful attention which she at all times stands in need of, but in this disease more than any other that I am acquainted with.

These cases will frequently terminate favourably, without manual assistance in delivery.

On the 18th January, 1831, I was called to see Anne Byrne, aged 26 years. Reported to have come to her full time in her first pregnancy. For the last two days she complained of being light-headed, with slight pain in her forehead. At twelve o'clock this day she took some tea, which, she said, "rose in her head like spirits;" then turning round, she fell on the floor in a faint, in which state she remained upwards of half an hour. At four o'clock she was seized with a violent fit of convulsions, requiring four or five persons to hold her down in bed. This fit

lasted twenty minutes, and was succeeded by coma. The fits returned at regular intervals of twenty minutes, she remaining comatose in the intervals. I first saw her at nine o'clock, P. M. She had had twelve fits. Pulse 100, full, labouring. Had no evacuation from her bowels for the last four or five days. Pupils natural. Iris acts well on the application of light; breathing laborious rather than stertorous; action of the foetal heart strong, 138 in a minute; os uteri not dilated in the least. To be bled to twenty-four ounces. Head to be shaved, and refrigerated with vinegar and water. A strong purging bolus to be given immediately, and an enema to be administered every hour until the bowels are freely purged.

19th. Two o'clock, A. M. Coma continues; fits very violent, recur every half hour; bowels not acted on; pulse strong, 90. Bled to sixteen ounces, and applied a blister over the entire head and neck.

Twelve o'clock, noon. Pulse 76, softer; fits not so severe; coma continues; foetal heart beats 140; no labour. Cannot take fluids; any attempt to make her swallow brings on the fit with great severity. No evacuation from the bowels. A cathartic bolus was now given, and injections, with turpentine, thrown up every hour.

Three o'clock, as before. At eleven P. M., while I stood by her bed, she recovered from the comatose state in which she had been for thirty-one hours. She was perfectly unconscious of what had happened. Said she had no pain any where. The bolus and injections were continued.

20th. Passed fæces involuntarily four times during the night. No return of the fits. "Her tongue," she says, "feels flat;" is moist and white. Pulse 78.

21st. Continues better. From this time she continued to improve. On the morning of the 25th labour set in, and she was safely delivered of a male child; the breech presenting.

This case is interesting in several points. The presentation was preternatural,—a very unusual occurrence. Profound coma

continued for thirty-one hours, and the labour, which did not set in until the eighth day after the first convulsive seizure, was accomplished without difficulty, and by the natural efforts. The woman's recovery was perfect.

From the foregoing observations I conceive the following conclusions to be fairly deducible :

1. Puerperal convulsions occur most frequently in first pregnancies ; the ratio being six in seven.
2. Amongst the predisposing causes, the age of the patient seems to have much influence. In one-fourth of the recorded cases the women were above 28 years old.
3. There is no decided premonitory symptom invariably present.
4. The presentation is almost invariably natural.
5. They are always attended with danger both to the mother and child. One-fourth of the mothers and two-thirds of the children perish.
6. In the treatment of this disease, copious blood-letting, early resorted to, and rapidly effected, is a measure of the first importance.
7. Active purgatives should be administered, either by the mouth or in injections, until the stomach and bowels are thoroughly cleansed of offensive matter.
8. Should those measures fail in controlling the disease, the uterus should be emptied of its contents as early as the state of the parts will admit of its being done *without violence*.
9. The natural efforts are frequently sufficient to effect the delivery.
10. Where interference is required, the forceps or vectis are to be preferred in many cases to turning, or the perforator, as
11. With the perforator the children are necessarily destroyed, and
12. Turning the child is attended with great danger to the

mother, as five out of seven of those on whom it has been practised have died. (Collins.)

13. The pathological appearances are frequently insufficient to account for the violence of the symptoms that characterize this disease.

ART. III.—*Cases, with Observations, on certain Malignant Cutaneous Diseases of the Extremities and the Trunk of the Body.** By L. BYRON, M. D., Surgeon of the County of Meath Infirmary, &c. &c.

CANCER, sarcoma, and fungus are the malignant diseases which usually assail the extremities and the trunk of the body. Various and contradictory opinions prevail with respect to each of those, not alone in different countries, but also amongst different writers of celebrity in the same nation.

It is much to be regretted that hitherto no fixed rules have been established, having for their bases what is known practically on these subjects, by which means good service would be done towards dispelling the illusions of those, who in the application of therapeutic agents affirm too much or too little.

An individual, Mr. Travers, to whom the medical profession is deeply indebted for many useful contributions, attempted, but, it must be confessed, failed in accomplishing a full practical history of malignant diseases. Few, perhaps, possessed a larger field of observation, or a higher order of talent, than he did; but he seemed to have mistaken the period for such an effort, and he undertook too much. What was beyond the reach of an individual, however, may, nay, it is confidently hoped, will be accomplished by the combined exertions of many.

* The term "malignant" is here used as signifying the power of a morbid growth at once to assimilate different tissues to its own substance; to produce similar diseases in distant parts, and to reappear after destruction.

The truth and force of the foregoing propositions will best appear by referring to the opinions of a few of the most approved systematic writers, foreign and domestic, on those important subjects.

In France and Italy the term cancer is of vague and undefined application, especially when it is employed in practice, and not in pathological anatomy. In this latter sense it may be understood, as Andral says, purely in a metaphorical sense, as “applicable to all the diseases, whether of irritation or sensation, which terminate in ulceration, spreading more and more, either upon the surface or within the substance.” It is even asserted that the term has been expunged from the vocabulary of pathological anatomy.*

It is proposed to remove from a tumour the early rudiments of malignant deposit, by scooping it out, leaving the non-malignant portion only behind; a refinement in diagnosis not warranted by our present knowledge of those subjects, and when viewed thus practically, will express that vain boasting which is justly condemned in the quaint language of Dionis:—“Pour chanter victoire il ne faut pas avoir pris une grande engorgée pour un cancer caractérisé comme font quelquefois ceux qui se vantent d’en avoir guéri des melliers.”†

* Madame Bouvin, p. 176.

† Cours d'Operations, p. 640. M. Bouilland (Op. citat.) sees no difficulty in the way of curing cancer, because cancer is mainly an inflammatory induration; and M. Breschet, guided by the speculations of Bichat, traces the disease to an aberration of “organic sensibility,” and is persuaded we may readily manage this peccant entity. Lisfranc denies that there is any general infection of the system in cancer, and he is not deterred from operating even when cancer has arrived at an advanced stage. He says (*Clinique Chirurgicale de la Pitié*, Tome Premier, Paris, 1841, pp. 141–3), “when the viscera are in a healthy condition, the patient not too far enfeebled, and the whole of the disease can be removed without leaving a wound of dangerous extent, sound surgery demands an operation, of which I have had proofs, both in Duputreyn’s practice and in my own. I have observed the patients afterwards, and have caused them to be observed by others, as far as lay in my power, and I believe that relapse is not a

French writers speak of the “tuberous cancer,” the “ulcerous cancer,” the “hæmatode cancer,” “cheloid cancer,” &c. terms sufficiently unintelligible, or which, if they have any meaning, point to external appearances, and assumed combinations, rather than true elementary properties or practical results. The following tabular view of cancer, as it is said to have fallen upon the uterus, in 409 cases, will best explain what is here advanced:

“ Under twenty years,	12
From twenty to thirty,	83
From thirty to forty,	102
From forty to forty-five,	106
From forty-five to fifty,	95
From fifty to sixty,	7
From sixty to seventy,	4
	<hr/>
	409.”

The above table makes cancer of the womb of most frequent occurrence under thirty years of age, with the exception of the period included between the thirtieth and the forty-fifth years.

In practice it must be confessed that most observers in those countries have arrived at erroneous results by following the whisperings of ardent or excited imaginations, and in seeing those things only which theory has painted to the mind. How can we otherwise account for the practice of meddling with internal open cancer or fungus, to the prejudice of science, and, it is feared, with injury to health and life.*

very frequent occurrence, especially if after the operation means to prevent the reproduction of the disease are adopted. Local bleeding alone will sometimes suffice for the cure of cutaneous cancer.”

* The truth and force of this observation is exemplified in numerous instances. Two celebrated men, Talma and Broussais, not many years ago fell victims to schirro-contracted rectum, and are examples of the inutility, if not the mischief, of attempts at the removal of that disease by operation. Amputation of the uterus too, as proposed and practised by Oseander, and by him first

Amid opinions thus speculative, and a practice necessarily vacillating and uncertain, it is gratifying to turn to the many faithful delineations of morbid diseases to be found in the works of Cruveilhier, Rayer, &c., and also the many valuable preparations preserved in the French and Italian colleges and museums, hereafter to be referred to.

In Germany and in England those diseases have been regarded with a close and patient attention, commensurate with their importance. The microscope, it is said, enables us to analyze the intimate structure of organs to an extent that may be compared with the powers of organic chemistry in relation to their ultimate constituents. It enables us to comprehend that which, without its aid, would be a closed volume to our search, and it explains many of the phenomena of life, which otherwise must have been for ever hidden to our investigation. Thus time has served, in a great measure at least, to establish the truth of the researches of the sublime Lewenhock, and a new era, full of promise, has arisen from the ashes of that which an imperfect physical information, imperfect apparatus, and imperfect manipulation had consigned to the lumber-room, and at which men pointed with the finger of ridicule and scorn. But let it be re-

brought into repute, is now but rarely practised,—never, I believe, except upon the vaginal portion of that organ.

Oseander performed this operation twenty-eight times; M. Duputreyn, from fifteen to twenty (Velpéau, *Nouveaux Elements de Medecine Operatoire*, Paris, 1832). Lisfranc seldom or never practises it; and according to Heisse, Oseander discontinued it some time before his death. Removal of the uterus by ligature was successfully performed by Vieussens, Anselin, and Johnson. The result of those and similar operations, namely, those of Land, Wolf, Blundell, &c., is thus summed up by Madame Boivin (*Op. cit.* p. 248):

“Of the nineteen patients, sixteen died in consequence of the operation; one as late as the fourteenth day (Langenbeck), another on the fourth (Barnes), most of them on the following, or the third at the least; some in a few hours, or even a few moments after the operation. Of the three which might be considered for a time as cured, not one survived longer than a year. In one of Dr. Blundell's cases death ensued from a return of the cancer.”

membered the science is yet in its infancy, and, like other sciences, is beset with difficulties, which assiduity and perseverance alone can conquer.*

Pathology, like physiology, has received a rich harvest of illustration from the microscope.

Our knowledge with respect to cancer and the other so-called malignant diseases, has been greatly enhanced by the labours of Müller, whose systematic arrangement is received as at once the most accurate and comprehensive of any in Germany.

According to the classification of Müller, we have "scirrhous, or carcinoma simplex," "carcinoma fibrosum," "carcinoma melanodes," "carcinoma medullaris," and "carcinoma fasciculatum (Hyalinum)."

Under the denomination of cancer, then, it would seem that he (Müller) includes many varieties of sarcoma and fungus, having tested their elementary properties anatomically, pathologically, physiologically, chemically, and microscopically.†

Müller properly remarks, that "although in most instances a general disposition to carcinoma exists from the time of its commencement as a local disease, yet it must be owned, that a local disposition may give rise to carcinoma, which may afterwards contaminate the whole constitution." Unfortunately he does not specify what form of carcinoma most frequently belongs to each. The author's friend, Professor Peckels, says, "once, from among many melancholy cases, he cured a true carcinoma of the breast by extirpation."‡ No doubt a rare occurrence.

The above able writer admits that growths widely differing

* The illustrations here referred to are chiefly of a *negative* character, by which we are enabled to say what cancer is not. This is strikingly illustrated in reference to the unphilosophical assumption, that carcinoma and tubercle are of parasitic origin.

† "Treatise on the Nature and Structural Characters of Cancer and those Morbid Growths which may be confounded with it, by J. Müller, M. D., Berlin."

‡ Op. cit. p. 85.

in their physiological characters and in their susceptibility of cure, may present a perfect identity in their minute structure; similarity of structure may coexist with differences in minute structure; similarity of structure may coexist with differences in their chemical constituents; or the same chemical characters may be found in growths between which the greatest diversity exists with regard to their structure, physiological characters, or curableness. In determining the different genera, therefore, the subject must be regarded in all these points of view. He adds: "The positive characters of carcinoma do not display any thing heteralogous or foreign to healthy organization; some of the elements of cancer occur in the healthy organization of the adult, while others are such as exist in the primitive foetal state of tissues, as cells, varicose fibres, and cylindrical fibres."*

However satisfactory the observations of Müller may be in displaying his industry and pathological sagacity, they as satisfactorily show how little microscopical and chemical investigations have hitherto done in clearing up the mystery that surrounds malignant diseases; and it is also apparent, that, much as we applaud labour so well bestowed, still those facts which experience teaches are mainly to be relied upon as the foundation of a correct nomenclature. Indeed Müller himself admits that there are characters by which "malignant" may be distinguished from "benignant" growths, but they are only appreciable by the naked eye, or with a lens, and lost under the microscope."† "The question is a clinical one."

Walther advocates the identity of medullary sarcoma and fungus hæmatodes. "We find," he says, "the medullary in the bleeding fungus." On the other hand, Maunoir, Kluge, Batscherer, and Hesse, who describe as medullary fungus that which by Walther is termed hæmatoid, and under a very different classification. Chelius coincides with Maunoir, and his opinion upon hæmatoid fungus is completely at issue with Wal-

* *Op. cit.* p. 131.† *Ibid.* p. 649.

ther. Nicolai differs in many points from all the foregoing authorities. Hensinger calls the medullary sarcoma encephaloid, and divides the hæmatoid fungus into fungus and anomalous fibro-cartilages.*

Osteo-sarcoma, osteo-stratoma (Ruoweenspeck) and spina-ventosa, are considered by Chelius† as diseased conditions of nearly the same nature, for in each an enlargement of bone is present, in which its natural condition is changed, being converted into a fungoid, fleshy, gelatinous, cartilaginous, fibrous, marrow, fatty, or lardaceous substance, in which pieces of bone of various sizes and shape are to be met with.

In England the classification of malignant diseases by Dr. Carswell is regarded as the most accurate and comprehensive. In the genus carcinoma of his specific division he comprehends scirrhus, medullary sarcoma, pancreatic mammary, and medullary sarcoma, and fungus hæmatodes; considering those diseases more in detail, he ranges or divides them under two heads, viz. "Scirrhomia" and "Cephaloma," a division founded on their possessing more or less vascularity.

Under the former head (Scirrhomia) he arranges the pancreatic sarcoma of Mr. Abernethy; the tissue lardacé of the French; and when it presents the appearance of jelly, and is collected in masses of greater or lesser bulk, in a multitude of cells, it is the *matiere calloide* of Laennec,—the cancer gellatine-forme or ariolaire of Cruveilhier.

Under the head "Cephaloma," the principal varieties, he tells us, are "derived from the appearances which the hæteralogous deposits present." Thus we have the common organized sarcoma of Mr. Abernethy, the mammary and medullary sar-

* For a classification or division of medullary and bleeding fungus, under the supposed parasitic origin of those diseases, see "An Inquiry into the Nature of Parasitic Tumours, and particularly Medullary Sarcoma and Fungus Hæmatodes, by F. J. Meyen, M. D., from the German."

† See the Handbook of Surgery, by Max. Joseph Chelius, Professor of Surgery in Heidelberg, 2 vols. 8vo. fifth edition, 1840.

coma of the same author; *matiere cerebriforme*, or encephaloid, of Laennec; spongoid inflammation of Mr. Burns, and soft cancer of various authors; also the pulpy testicle of Mr. Baillie.”

Without subscribing to the fidelity of the above arrangement in all its details,* I affirm that the two great classes of malignant diseases, viz. cancer and fungus, are here pointed to with a force and accuracy not to be mistaken.

Inquiries into this interesting field of science leave us, up to the present time, in perfect ignorance as to the first origin of malignant diseases, and much doubt as to their identity and mode of transmission; we need not, therefore, feel surprise at the discrepancy of opinion here referred to, nor the multitude of false facts brought forward in support of these various doctrines. A few examples only shall be referred to on the subject of identity.

The general sense of authors is, that cancer rarely occurs in early life, seldom originates in old age, and is especially frequent in both sexes between the ages of 35 and 50. We are told by the same authorities, however, that cancer may originate at *every* period of existence;† and the case of Billard‡ is quoted, where the development of scirrhus had taken place in the heart during intra-uterine life. By referring to the above and similar cases recorded by Mr. Travers, Sir A. Cooper, Mr. Carmichael, and Sir R. Brodie, &c., it will be found that the cancer was always of the encephaloid species; in other words, that they were cases of what is called medullary sarcoma or fungus, and thus accounting for the startling announcement to be found in the following Table, supplied to the Registrar-General, in pursuance of the late Registration Act, obtained through the obliging interference of Mr. Farr.§

* It appears strange why common sarcoma,—a term not well understood,—should be regarded as malignant.

† *Traité des Maladies des Enfants*, Pl. viii. Feb. 2, 1828.

‡ *Cyclopædia of Practical Surgery*, p. 624.

§ *Op. cit.* Perceiving the clashing results of various authors, we might

TABLE I.

Showing the absolute Mortality from Carcinoma in both Sexes and at all Ages.

AGE.	Males.	Females.	Both Sexes.
One Month,	0	0	0
2 do.	0	1	1
3, and under 6,	0	1	1
6, " " 9,	0	0	0
9, " " 12,	0	0	0
1 year,	2	1	3
2, "	1	4	5
3, "	0	1	1
4, "	0	1	1
5, and under 10,	3	2	5
10, " " 15,	1	4	5
15, " " 20,	3	5	8
20, " " 25,	4	2	6
25, " " 30,	1	13	14
30, " " 35,	6	23	29
35, " " 40,	15	43	58
40, " " 45,	19	77	96
45, " " 50,	23	98	121
50, " " 55,	34	130	164
55, " " 60,	35	120	155
60, " " 65,	44	110	154
65, " " 70,	45	83	133
70, " " 75,	35	69	104
75, " " 80,	30	49	79
80, " " 85,	16	28	44
85, " " 90,	1	8	9
90, " " 95,	2	1	3
95, and upwards,	1	0	1
Totals,	321	896	1200

The above Table, like that of the French, already referred to, makes cancer a disease which cannot be said “rarely to oc-

exclaim with Richter, when referring to discrepancies between Monro and Hill, “Jure sane dixeris de uno eodemque morbo nos veros loqui, dubitare fere potest.”

cur in early life," and here too, the error evidently consists in calling fungoid diseases by the name of cancer.

Ireland has hitherto been comparatively a "silent sister" on the subject of malignant diseases, although, as already observed,* a "well known fact" exists in this country by which surgeons especially are enabled, for the most part, to arrive at correct diagnosis between cancer and fungus. This *traditional*, and as yet unexplained faculty, is, however, not less open to objections than those already referred to.

Facts faithfully recorded, apart from speculation and hypothetical reasoning of every kind, are required, and it is believed will be found sufficient, in most cases, to lead to an accurate diagnosis, if not between malignant diseases themselves, at the least between those and other morbid and adventitious growths.

The following cases and illustrations are selected in the hope of aiding in this design, and should they fall short of accomplishing the end aimed at, still, abstractedly considered, it is hoped they will not be found devoid of interest; and should they serve but to stimulate others to similar, but more successful efforts, I shall feel amply compensated for the time and trouble bestowed upon them.

First, with reference to cutaneous cancer, as regards the origin of which pathologists are for the most part silent. Some, indeed, are of opinion, that lupus and cutaneous cancer do not always begin as tubercles. Having, in a former essay,† explained, at some length, the rise, co-existence, progress, and treatment of the former, I shall endeavour to illustrate by facts the latter; being a group of malignant cutaneous diseases very different from that which Willan, Bateman, and Lisfranc have described under the denomination of "tubercle," and which includes alterations of the most dissimilar description, such as carbuncle, rosacea, ele-

* See an Essay by me on Certain Malignant Diseases of the Head and Face. Dublin Journal, July, 1842, p. 396.

† Dublin Journal for September, 1842.

phantisis, furuncle, alopecia, &c. &c. Tubercle, in the phthisical acceptation of that term, rarely forms in the skin. Rayer says, "I have never observed a deposit of tubercular matter within the substance of the skin,"* but quotes the case of Laennec,† where the latter is supposed to have inoculated himself with the matter of tubercle, through a wound received in dissection. The case, however, seems to be inappropriate, and opposed to a host of experiments on the subject of tubercular transmission. The quotation which follows from the writings of my friend, the late Dr. J. Crampton,‡ is much more in point. Such occurrences are, however, admitted to be rare; not so as regards cancer, especially those of the skin, subcutaneous tissues, and the scirrhous follicles, which latter have been seen to become morbidly developed over tumours regarded as cancerous. §

CASE I.—J. Tighe, æt. 53, labourer, a tall man, remarkable for great muscular power, and apparently in rude health, was admitted an intern patient at the Meath Hospital, September 15th, 1836, on account of an ulcer upon his foot.

About a year previously, he states, a small, slightly elevated, hard, wart-like excrescence first appeared upon the site of this ulcer, and was occasioned, as he supposed, by undue pressure from the binding of his shoe; for about six months he suffered no pain nor concern, but soon after it became more elevated, opened at the top, leaving fissures between, from which, when it was irritated, issued a reddish glutinous sanies. His business, that of watchman at a carman's stage, prevented him indulging,

* Rayer on Cutaneous Diseases, p. 1024.

† Laennec, *Traité d'Auscultation Médiante et des Maladies des Poumons et de Cour*, 2nd ed. I. L. p. 649.

‡ Crampton, J.—A case of Tubercular Affection of the Skin.—*Transactions of the Association of Fellows and Licentiates of the King and Queen's College of Physicians, Ireland*, vol. v.

§ Weber (L. H.) *Obs. sur l'épiderme, les follicules cutanés l'ouvroissement du volume de les derniers organes dans les tumeurs cancerusses et les poils chez l'homme*.—*Journ. Complem. de Sc. Med.* XXXIX. p. 38.

or using any remedy for it; under these circumstances the tumour increased in size, and the pain, always of a lancinating kind, increased in an equal ratio. A fortnight previous to admission the disease had acquired the size of a large filbert nut, when suddenly it became dark coloured, and fell out, leaving a deep ulcer to mark its situation.

The following notes were taken on his admission :—" A circular ulcer, resembling an inverted cone, into which the segment of a small hen's egg would fit, presents itself immediately below the right malleus internus. The edges of the ulcer are not hard nor thickened, but slightly inverted, being in continuation or parallel with the surface of the ulcer itself, which, for the most part, is red and healthy in colour, but so smooth and devoid of granulations as to give the idea of a small circular piece having been recently cut out of the part. A small, foul, dark-coloured slough rested at the bottom of the ulcer, and appearing to consist of dead ligamentous matter, could not be removed. He complained of but little pain, but what he had was chiefly confined to his foot and leg, and was of the sharp lancinating kind." The cavity of the ulcer, which appeared about an inch deep when freed of the above-named slough (an event which took place ten days after his admission), gradually but steadily closed in, and was perfectly cicatrized at the end of *five* weeks from the date of his admission. Pain of every kind had entirely gone off previous to his being discharged.

Re-admission.—Six months afterwards he (Tighe) returned to the hospital, having a tumour in the right groin about the size of a turkey's egg, firm to the feel, oblong, but moveable, being apparently upon the sheath of the femoral artery, a short distance below Poupart's ligament. His general appearance had undergone a material change, being now sallow and a good deal emaciated, owing, as he supposed, to sleepless nights, occasioned by sharp shooting pains through the tumour, but still more, he thinks, from the apprehension of consequences.

At his earnest desire the tumour was removed : the disease

presented a good specimen of what is described under the denomination of "stone cancer." The wound cicatrized speedily, and at the end of a fortnight he was again discharged, apparently cured. Twelve months from the date of his last discharge he again presented himself a miserable picture of disease and suffering. The disease had not relapsed either in his foot or his thigh, but the lymphatic glands in the line of the hypogastric vessels, and likewise those of the mesentery, could be felt enlarged to the size of hand-balls. He was not readmitted, but rapidly lost strength, and, as I was informed, died.

CASE II.—John Coogan, labourer, æt. 55 years, was admitted an indoor patient, March 1st, 1840. About fifteen months before, he first observed a puckered thickening, and hardness of one spot of the skin, about the middle of the sole of his left foot. He thinks the cause was having hurt the part by a bit of gravel having got into his shoe, when employed in digging with a spade, which employment he was obliged to continue until the excrescence attained the size of a segment of a hazel-nut ; it was not so elevated, but in all other particulars it resembled the foregoing case.

A fortnight before his admission, the tumour suddenly became insensible and dark coloured, and soon after sloughed away, leaving a clean, healthy-looking but deep ulcer, perfectly circular in shape, and in all particulars resembling the foregoing case already referred to : it speedily propagated towards cicatrization, and was perfectly healed at the end of three weeks from the date of his admission. Before leaving the Hospital, he directed my attention to a tumour in his groin of the affected side, which, on examination, left no doubt of its being scirrhus. It was not judged prudent to interfere further by an attempt to remove this new tumour. Soon after the entire chain of lymphatic glands, above and below Poupart's ligament, became diseased, and he sank progressively, and died about four months afterwards, as these poor victims do, a melancholy witness of the im-

perfection of the healing art. No recurrence of the disease took place in the site or neighbourhood of the original ulcer.

CASE III.—*Cutaneous Cancer arising in old Cicatrices.*

John Leonard, farmer, æt. 52 years, when about four years' old received a severe burn upon the upper part of his right foot, involving three of his small toes. An old adhesion seems to have formed between the little and the adjoining toes. No inconvenience was, however, experienced from this accident and the consequent deformity, beyond a slight tenderness in the new skin, until about two years before seeking my advice, at which time a soft wart sprang up from the cicatrix, at the base of the first phalynx of the third toe: this soon after extended itself, accompanied by sharp pain in the part itself, and also shooting up his leg and foot.

The report taken at the time runs thus: "The greater part of the cicatrix is thick, hard, and elevated. A soft wart-like excrescence occupies the entire upper surface and the sides of the two smallest toes, and also, the dorsum of the foot, for the extent of a copper penny-piece: but was extremely irregular in its outline, as also upon its surface. In some places, this prominent mass seemed made up of tolerably smooth rounded tubercles, of various sizes, varying from that of a grain of wheat to a hazel-nut; leaving sulci between, from which issued a thin whitish discharge, mixed with blood. More prominent points were, however, visible, especially about the junction of the little and adjoining toes. These pendulous masses seemed made up of fibres, loosely held together, and, *en masse*, so feeble as to bend by their own gravity. Pain in the affected part, and up the limb, had now increased to such an extent as to render his nights sleepless. His constitution, too, which was remarkably good, became wasted; his appetite bad; and he suffered much from apprehension also. No time was lost in removing the limb; it was amputated immediately above his ankle-joint. The stump was healed three weeks after the operation. His rest,

health, and spirits were speedily restored, and now, a period of 23 years after, he is in the perfect enjoyment of rude health.

CASE IV.—John Magrath, æt. 56 years, admitted into Hospital December 19th, 1842; says, that before he could remember anything, having attained, as he was informed, his sixth year, various swellings, which, from his description of them, and the present appearance of the cicatrices, would seem to have been scrofulous, broke out upon the calf of his left leg, extending downwards to his ankle, uniformly maintaining their position upon the posterior and internal aspects of the limb. About the same period, but subsequently, the back of his left hand was affected in a similar manner. Ulcers having repeatedly broke and healed again, by which the entire of the back of his hand presented one entire surface of new skin, and the little finger was arrested in its growth, or rather seemed to have lost all but its last phalanx, which, together with the ring-finger, also mutilated, formed one irregular protuberance bearing little resemblance to a finger.

From time to time, since he was twelve or thirteen years of age, various ulcers broke out and healed again upon his left arm, and upon the left side of his neck. No ulcer appeared upon the right side of his body or extremities.

About eleven months ago he first observed a callous, wart-like hardness of the integument covering the root of his left fore-finger, or rather between it and the middle finger, accompanied with sharp pain in the part, which he endeavoured to relieve by cutting off the prominent, insensible, corn-like matter with a razor. He repeated this operation from time to time for the succeeding three months, with, he thinks, temporary relief. The substance removed was, he reports, hard and insensible as his nail, and resembled soft horn.

At the expiration of the above-named period (three months), the callous matter, to use his own words, “opened out,” presenting a lip or everted edge upon it. It became soft and tender to the touch; there were also small, soft tubercles upon its

centre ; and he could no longer cut it as before. Distinct ulceration had now formed in various points between the tubera, giving out a thin, pale, white discharge, mixed with blood whenever the part was irritated by rough washing, &c. From this period the pain, of the lancinating kind, increased in intensity, as did the ulcer in extent.

The report taken on his admission runs thus : “ The entire space covering the metacarpal bones, is occupied with a foul, irregular ulcer, having irritable, everted edges, with deep sulci bounding irregular, roundish, flesh-like projections, which stood out in relief in several places throughout its surface. All power of flexing the fingers is lost, the disposition of the limbs being that of extension.”

For some time (about two months) before admission his appetite failed, his rest became disturbed ; and he is now extremely weak and sallow—cachectic. The hand was amputated on the 1st of January, 1843, and he was discharged cured a fortnight after, having regained in some measure his strength. He is now, five months after the operation, in perfect health, has regained his flesh, sleep, &c.

Examination of the Disease.—The integuments constituting the boundary of the insulated tubera were, like them, composed of whitish substance, so firm as to give considerable resistance to the scalpel in cutting through it ; the only difference consisted in the former possessing greater firmness and being less muscular than the latter. Cellular septæ could be distinctly seen in several places throughout its substance, but in no instance did the diseased texture present a fibrous nor a cartilaginous texture. A part of the diseased mass pressed under water communicated to the latter a whitish turbidness which might, by some, be likened to “ apple-juice.” The bones of the little finger are altogether absent as to that of the first phalanx of the ring-finger. The other phalanges of this and the other fingers are in several places denuded of periosteum, dark coloured, apparently dead and undergoing absorption.

CASE V.—A. C., a gentleman, æt. 32 years, of robust constitution and active habits, got a wart-like induration upon the knuckle of the middle finger of his right hand, which, he thinks, was occasioned by repeated contusions received from the recoiling of his gun, when shooting. For about two years he paid little or no attention to it, but for three months previous to his consulting me, he experienced a good deal of lancinating pain in the part shooting upwards towards his elbow; the wart, too, had grown unusually large within that period, and opened in an irregular manner in its centre, giving pain on pressure or much handling. The part was freely excised; the wound healed in a few days, and he is now, twelve years after the operation, in good health.*

CASE VI.—J. Crawford, æt. 40 years, has applied various remedies to a pimple, as he called it, which appeared upon his left elbow, about ten months before; it had not improved, on the contrary, the little excrescence had grown longer within the preceding month, and it was not free from pain, of a sharp kind. On examination, the following appearances were noted:—a light coloured, almost circular excrescence, not more than six or eight lines in diameter, is found over the inner side of the olecranon; it is flattened, and its surface covered with a light-coloured furfuraceous exfoliation; is not raised half a line above the surrounding surface; its base, however, is slightly indurated. The chlorate of zinc, in a state of deliquescence, was applied to the part, and ordered to be repeated every day, using no other application nor internal remedy beyond a simple water douche, which treatment perfectly removed the complaint at the end of ten days.† No relapse occurred, now a period of four years.

* The absence of fibres in this case stands opposed to what is usually found under like circumstances, as stated correctly by Mr. J. Hawkins (*Med. Ch. Trans.* vol. xxiii.) I have also been shown by Dr. Smith in the Museum of the Richmond School of Surgery, specimens corroborative of the above-named evidence.

† The chloride of zinc has been uniformly successful in a multitude of sus-

CASE VII.—*Cancerous Ulceration without any precursory Induration or Tubercle.*

John Kellett, labourer, æt. 56 years, was admitted, Jan. 5th, 1828. Eight months previously a small itchy pimple, as he thinks, but which he did not see, came upon his right shin about its lower third; having scratched the part a foul ulcer immediately formed and spread progressively to the size noted in the following report taken at the time of his admission. “A foul irregular ulcer, with, in some places, thickened and inverted edges, occupies the middle third of his right leg; several flesh-like, pale red tubera, for the most part of a rounded shape, stand out from various points of its surface, having usually at their bases irregular sulci, more or less filled with thin, pale white glutinous matter, mixed with blood, which latter was plentifully poured out upon the slightest irritation, such as a towel or sponge used in cleansing it. Some cicatrices were here and there visible, but they were small, and have no comparison, in point of extent, with the open surface, the latter being *at all times* out of all proportion greater than the former. His general health has given way under the constant discharge, and almost constant lancinating pain, which latter attended its earliest appearance, but became more harassing and severe, as well as more constant, as the ulcer grew in size. The lymphatic glands in his groin are not enlarged. His entire aspect is peculiarly characteristic of what is described as the cachexia cancerosa. A few days were spent in attempts to prop up his strength by the use of good food, tonic and sedative medicine, &c; at the end of which time the limb was amputated immediately below the knee-joint. The stump healed kindly and quickly, and soon after he regained his flesh, strength, and healthy appearance. He is now (fifteen years from the date of the operation) in perfect health.

picious excrescences resembling the above; indeed it has not been known to fail in my practice where the induration was neither much elevated nor deep-seated.

CASE VIII.—*Tuberculated Cancer of the Skin.*

M. K——, æt. 57 years, a lady in the enjoyment of good health, first perceived an itchiness in the nipple of her left breast in the month of June, 1820. On examination she could perceive nothing more than a slight rugose puckered state of the skin on one side of the base of the nipple, by which it seemed drawn towards the affected part, this gave her little concern until a short time afterwards, when the induration above-named seemed to have extended itself, and various hard tumours not larger than small peas, some like pin-heads, were felt in clusters under the skin of the breast adjacent to the affected part of the nipple.

A soothing plan of treatment was adopted; a poultice of starch was laid over the part; she was ordered to travel and avoid pressure or any irritating application to the part. Six months afterwards the disease had advanced over one-third of the breast; some of the subcutaneous tubercles were as large as beans, were not regularly defined in their outlines, but seemed lost in the neighbouring skin, which had now a marked character, being divided into sulci or chopped divisions, perfectly dry, and having in some places a furfuraceous or scaly appearance. The itchiness, which at first was the only distressing symptom, was now accompanied with pain of a sharp kind, which cannot be mistaken. Twelve months from the first invasion of the disease, two-thirds of the breast was occupied by it, and it seemed to extend itself downwards; the skin under the breast, as far as the eighth rib, having assumed those appearances above-named. The mammary gland seems to be intact, as were the lymphatic glands in the axilla. Her aspect is now indicative of anxiety and suffering, and her flesh and strength much wasted. The liver can now be felt in the epigastrium and below the margin of the sternum; and a multitude of tumours, some as large as pigeons' eggs, can be felt upon its convex surface. The disease continued to progress for ten months more, when it had involved the entire side from the last rib to the

axilla. The liver could be felt as low down as the umbilicus ; the tumours above-named had in some instances acquired the size of hen's eggs, when completely worn out by pain and suffering, she expired.

Autopsy.—In cutting through the diseased integument, a uniform degree of resistance was given to the scalpel, nearly equal to what is experienced in cutting skin of bacon, and the appearance of the part, when cut, was not unlike that substance. The tubera above-named were strictly confined to the skin and subcutaneous cellular substance ; those in the skin might possibly be traced to the mucous follicles, but those were evidently not the primary or original seat of the disease. Neither the mammary gland, nor any of the deep-seated parts of the breast were engaged in the disease. The lymphatic glands in the axilla, with one exception only, were equally free from disease or enlargement. The gland alluded to seemed to be only sympathetically affected. The appearance of the liver was remarkable : the right lobe had grown to fully double its natural size, and so complete was the cancerous degeneration, scarcely a vestige of the normal texture could be traced. The tubercles, which were numerous and of various sizes upon its surface, and throughout its substances, were made up of cheese-like matter ; one of them, about the size of a hen's egg, was soft in the centre, containing a thin semipurulent matter, of a dark brown colour ; the left lobe was comparatively free from disease. The gall-bladder was contracted, and contained some dark bile. The renal capsules had undergone some change, as had the pancreas also ; but the stomach, lungs, and other viscera, were sound. The brain was not examined.

CASE IX.—*Tuberculated Cancer cured by Excision.*

Patrick Reynolds, æt. 45 years, farmer, perceived an itchy sore, as he described it, at the base of the nipple of his left breast, which for about three months remained almost stationary, but for the last month it has grown more troublesome, and there-

fore he sought my advice. On examination the nipple was found puckered and drawn to one side, as in the preceding case ; there were several hard, but small, granular tubercles to be felt in the neighbouring subcutaneous substance, and he had pain characteristic of malignancy in the part. I advised the immediate removal of the part, which he consented to ; the diseased skin was *freely* excised ; the wound healed kindly, and he has had no return of the disease, now a period of thirteen years since the operation.

CASE X.—*Cancer of the Prepuce.*

J. L., a gentleman of temperate habits, æt. 45 years, first perceived a rough tumour upon the inside of his prepuce in the Spring of 1832. He soon after applied to a medical man, who under the suspicion of his complaint being syphilis, gave him mercury, and applied to the part, caustic, ung. sabinæ, &c. Not finding himself better, but on the contrary much worse, he applied to me in the following Autumn, seven months from the first invasion of the disease.

The following note was taken at the time, and is descriptive of all malignant, cancerous warts, which I have seen growing from the prepuce, or the delicate mucous surface of the vulva in females.*

Close beside, and involving the frenum preputii upon the right side, was a pendulous, irregular wart, of a bright red colour, having *deep* sulci or divisions sinking between unequal portions of those projecting fibrous-looking growths. He complained of but little pain in the part, unless when it was handled. The pain, however, was of the lancinating kind. Having

* A wax preparation of this species of wart-like excrescence, combined with cancerous ulceration of the glans penis, beautifully coloured, was presented by me, and is preserved in the Museum of the Royal College of Surgeons in Ireland. It is not numbered in the Catalogue, but Mr. Houston, the learned Curator, will show it. This man recovered, and will be referred to at a future period, under the head of Cancer of the Male Organs of Generation.

consented to the excision of the part, the disease was accordingly freely removed. The wound was healed twenty days after the operation, and he is now, after the lapse of upwards of eleven years, in perfect good health.

CASE XI.—*Sarcoma.*

Elizabeth Donough, æt. 40 years, the mother of one child, of a robust make, but dark, sallow complexion, which she ascribes mainly to the following enlargement of her clitoris, applied to me in the month of September, 1817.

The following account given by herself was noted at the time :

“ About fifteen years before she got a hurt in the part by striking against the corner of a table, which caused at the time a good deal of inflammation, and was followed by a slight enlargement in the part. Has been subject to similar returns of inflammation at uncertain periods ever since. The first symptom of amendment from those attacks, one of which I had an opportunity of witnessing, was the discharge of a thin watery or serous fluid from the affected part (also the lower part of her abdomen, the upper part of her thighs and nates), followed by a thickening and desquamation of the cuticle. Those illnesses she described as so severe, she was often confined to her bed by them for a fortnight at a time. The catamenia were, however, always regular in time and quantity. She was not subject to any vaginal discharge; has never had syphilis.”

The size of the tumour was as follows: from the ossa pubis to its most pendent point $9\frac{1}{2}$ inches; circumference, at the thickest part near its base, $12\frac{1}{4}$ inches; the circumference of the apex or stem was 7 inches.

The body and under surface of this irregular, flesh-like mass of disease were made up of clusters of circular tumours, verging in size from the largest hazel nut to a grain of mustard seed. This tuberculated appearance became less conspicuous towards its origin, where for about two inches the surface was smooth, and had a polished appearance.

The entire surface of the tumour was shaded unequally with a dark brown colour, in some places amounting to black, as about its centre. The lower part of the abdomen partook of this dark colour, intermixed with yellow and brown. A cicatrix about the size of a crown-piece appears upon the left side of the disease about its middle, this marked the site of an ulcer which remained open for about two months during the preceding year, when it healed without any attention having been paid to it. A similar cicatrix appeared in her left groin, also the seat of ulceration three years previously. The labiæ were enlarged and thickened, as were many of the lymphatic glands in the left groin. Both nymphæ were drawn forward and thickened, the left one forming a part of the disease, and having but a thin attachment to the corresponding labium. The labiæ were tender to the touch, and often pained without handling them ; the tumour itself was comparatively free from pain.

The poor woman readily gave her consent to the amputation of the disease, which operation was performed on the 2nd of October, 1817, in the following manner. The first incision was made through the parts connecting the right nymphæ to the libium externum of the same side, terminating in front, at the apex of the tumour, close to the pubis. A similar incision was made on the opposite side, but this traversed the centre of the left nymphæ, so much of that body appearing to have partaken of the characters of the disease. A circular incision was next made round the tumour, close to the symphysis pubis. It was my intention to have formed a flap of the integument covering the disease at this part, but it was found to be thickened, and, therefore, the parts were divided in a straight line close to the ossa pubis, leaving an open exposed surface. Several large vessels, chiefly veins, appeared upon the face of the wound. Two or three only were tied, and so trifling was the bleeding, it seemed as if we need not have tied any of them. The wound was dressed in the common way, secured by a T bandage, and an anodyne was ordered. No untoward symptoms set in, the

wound granulated kindly, and healed perfectly by the end of five weeks, when her general health and appearance had much improved. A slight thickening of the integument covering her abdomen and thighs remained for several months afterwards, but the watery exudation and inflammation had ceased from the date of the operation.

I visited this poor woman a few days ago (26 years after the operation), and found her in perfectly good health. She told me neither swelling, inflammation, nor discharge ever returned to the parts originally affected, and her health has been uniformly good since the operation.*

CASE XI.—Henry Ogle, æt. 50 years, admitted May 1st, 1843. About four months previously he was attacked with pain, not violent nor lancinating, in his throat, accompanied with a sense of suffocation and a difficulty in deglutition; those symptoms increased so much within the following month, the gentleman, under whose care he then was, performed the operation of bronchotomy, and from which he experienced great relief, especially in his respiration; deglutition is still difficult; he is sallow and emaciated, but does not suffer much pain. An attempt was made to withdraw the canula, but a sense of suffocation immediately followed, and the instrument had to be replaced; no tumour appeared in the mouth nor upper part of the pharynx, nor was there any approach to tumefaction externally, save a tumour of an oblong shape, about the size of a pigeon's egg, which lay between the trachea and the sterno-mastoid muscle on the right side, opposite the thyroid cartilage. This gave some pain of a lancinating kind, but evidently bore no share in

* My friend, Dr. Chs. Johnson, the present Master of the Rotunda Lying-Hospital, Britain-street, was in the habit of exhibiting this remarkable disease to a numerous class of pupils, during the period that he so honourably and so ably discharged the duties of Professor of Midwifery to the College of Surgeons in Ireland. The preparation is still preserved in the Museum of that Institution.—See Catalogue, F. C. 746.

producing the above-named symptoms. His emaciation became excessive, the smallest particle of food only could be swallowed at a time; the pain, too, became more urgent and acute, but no alteration was apparent in the symptoms beyond a slight increase in the size of the tumour, and greater tenderness under pressure. A probang could not be passed into the œsophagus, and thus he lingered until the 12th of June, when he died, apparently from inanition.

Autopsy.—Eight hours after death the body was examined. Having raised the common integument from the front of the neck, an oblong tumour was found in the situation above named, of an oblong form, and occupying a space from near the angle of the jaw to the lower end of the cricoid cartilage, lying upon, but unconnected with the sheath of the blood-vessels, except at one point, where not only the sheath of the vessels but the coats of the internal jugular vein were amalgamated with the diseased structure, so as to be inseparable from it by the scalpel. On opening this tumour, about half an ounce of straw-coloured fluid escaped, from what looked like a thickened cyst, having upon its surface hardened scirrhus matter of various degrees of density; it cut with the resistance of fibro-cartilage, yet no fibres, beyond slight divisions or bands, could be discovered; irregular cavities are visible in some places, giving it a cystic appearance; those cavities seem lined with adventitious membranes.

On opening the œsophagus, an irregular lobulated fungoid tumour was discovered, hanging in a pendulous manner from the lining membrane of that tube, commencing a short distance above the base of the epiglottis on the right side, and passing obliquely downwards for about two inches and a half across the back of the larynx, involving the lining membrane of that organ and the epiglottis, and terminating about the lower end of the thyroid cartilage, having the appearance of the mesentery. The principal part of the tumour was situated within the pharynx, a portion only (one of its inferior lobes) forced itself down the

œsophagus, which it completely filled. Taken *en masse*, this tumour may be said to consist of two great lobes, equal in bulk to the clenched hand, and clearly divisible into a number of lesser lobules; it is deep rose-coloured, with here and there paler tints of shade. On opening one of these lobes a granular, and, in some places, a whitish fibrous substance, presented itself, having the consistence of soft cartilage, or a substance between that and the fat of bacon. One of those lobes opened vertically, gave the appearance of melanotic matter distributed in an arborescent manner, the trunks being placed towards the base of the tumour, and the branches towards the extreme superficies. They were highly vascular, and to that fact seems ascribable the foregoing appearances in a great measure at least. Pressed under water, a diffused turbidness mixed with red was observable, which resembled the "apple-juice ichor" of Cruveilhier.*

CASE XIII.—*Fungoid Tumour of the Skin.*

A. S——, a healthy boy, æt. 4 years, had an elastic tumour upon his back, over the spinous process of the second lumbar vertebra. It was in size about that of a walnut, divided into two lobes, each possessing a prominent point outwards, less firm and darker coloured than the base of the tumour or the surrounding skin. My first impression was, that it was a nævus; but his mother assured me that the child had no mark nor tumour in that part when born, and that it first made its appearance about five weeks previously. At first she described it as a circular, hard tumour, about the size of a pea, fixed and immoveable, as if, to use her own words, it were fastened to the parts beneath it. The disease was freely excised by two elliptical incisions: it was observed when disengaging the tumour from its connexions, a hardened cellular or ligamentous band passed between it and the body of the vertebra, which could not be fol-

* This specimen is preserved in the Museum of the Richmond School of Surgery.

lowed to its origin, but was divided at as great a distance as possible from the disease.

The lips of the wound were brought together by suture and adhesive plaster ; for six days it appeared to do well, a small opening only in the centre of the wound did not cicatrize ; and this continuing foul and sloughy for ten days longer, a fungous growth was observed to spring up from the bottom of the wound, when the nature of the disease was apparent. From this period, the pain, which previous to the operation was but trifling, now became harassing and intense.

The disease advanced with great rapidity, involving, within the space of the following two months, an extent equal to three lumbar and three dorsal vertebræ. The poor sufferer sank from repeated hæmorrhages and pain.*

No examination of the body was allowed.

Examination of the Tumour.—A transverse section of the tumour from within outwards, exhibited, 1st. Condensed cellular substance ; 2ndly. Encephaloid matter, with here and there, especially towards the parietes and upon the posterior aspect of the disease, bands or tufts of fibrous, semi-cartilaginous matter. 3rdly. Externally in the direction of the discoloured skin, was seen a vascular net-work, covered by cuticle only.

CASE XIV.—*Subcutaneous Tuberculated Fungoid.*

J. Trevor, æt. 24 years, was admitted an indoor patient, January 1st, 1830. About three months previously, he first perceived a small tumour, the size of a pea, upon his head, having been preceded, for several weeks, by constant and pretty severe pain in, as he thought, the bone of the cranium. February 1st. Fresh tubercles could be felt in the neighbourhood of this, which had now attained the size of a mulberry, and about the same time a number of tubercles made their appearance on different regions of the body, but chiefly upon the abdomen and thighs.

* A wax cast of this disease was lately presented by me to the College of Surgeons, Ireland, where it is preserved, but not yet numbered in the Catalogue.

Many of these tubercles had the appearance of molluscum: his abdomen was large, and the seat of severe lancinating pains. Symptoms of morbid alterations in the abdomen soon afterwards made their appearance, and a distinct tumour could be felt in the hypogastric region. This tumour was the seat of violent pain. On the 6th of March, symptoms of acute peritonitis set in, and, notwithstanding the strict application of what was deemed the best treatment: he died on the 10th, four days from the invasion of the peritonitis. The body was inspected twelve hours after death. The tumours of the scalp were completely subcutaneous, and of various sizes and shapes; some as large as mulberries; others like grains of sand; but all fixed and lost insensibly in the adjacent parts:—the bones of the skull were sound; but in one or two parts the pericranium was thickened, and appeared to have taken on diseased action. The skin which covered them was intact: when dissected out, their surfaces were lobulated: when cut into, they were found composed of brain-like matter, in a crude state. Two of the largest size were highly vascular, especially around their bases, and towards the skin; internally, they were softened. Among the hair of the pubes, and near the umbilicus, were three small, red, fungoid tumours, each as large as a walnut, also formed of encephaloid matter. The peritoneum, in a state of inflammation, contained about a pint and a half of sero-purulent fluid. The pelvis was filled by a tumour, uneven on its surface, of a pale-rose colour, as large as a child's head, lying in front of the rectum. When cut into, this tumour presented a lobulated appearance in some places, having the characters of what is called encephaloid; in others, from being made up of tufts of fibres, and in a few instances the lobules bore a strict resemblance to scirrhus. Several, four or five, lobulated encephaloid masses, as large as pigeon's eggs, lay irregularly dispersed in the direction of the superior aperture of the pelvis. The right lung had adherent to the convex surface of its middle lobe, a flattened tumour of the above named description. The

viscera of the abdomen were perfectly healthy. The brain and spiral sheath were not examined.

Numerous examples of misnamed cancers of this description might be given from my own practice, but they so strikingly coincide with what has been already figured and described by Cruveilhier,* Rayer,† and Dr. Carswell, it will be sufficient to refer to one such case described by the latter author,‡ who thus sums up the post mortem appearances: "All the tumours presented the physical and anatomical characters of what I have called the cephalomatous species of carcinoma, comprehending those varieties of the species called the mammary, lardaceous, and cerebriiform sarcoma. The greater number of them, however, presented, in a very striking manner, the characters ascribed to the mammary, bearing a marked resemblance to a section of the boiled udder of the cow. Portions of these, as well as the whole substance of others, resembled, in colour and consistence, a section of fresh pork; while a few only presented traces of the cerebriiform or encephaloid variety, from the resemblance of the carcinomatous matter to soft brain. We had thus, in these tumours of the pleura and peritoneum, three varieties of carcinoma, each variety existing alone, or combined with another in various proportions, in the same tumour,—circumstances which I beg you to remember as a strong evidence of their being merely modifications of form of *one and the same disease*, rather than distinct morbid products accidentally continued in the same tissue or organ. To impress this important fact still more strongly on your minds, I show you these delineations of two cases of carcinoma of the pleura and peritoneum, in both of which we have the same varieties of the disease that we

* *Maladies de la Peau*, &c., Liv. 32, Pl. 4. Here the disease was combined with melanosis.

† Rayer on *Cutaneous Diseases*, p. 723. This form of disease was first described by him under the denomination of leucoid or mollusciform and disseminated encephaloid forms of cancer.

‡ *Lancet*; March 30, 1838-9. "Clinical Lecture."

have seen exist in the case we have just been considering ; and in addition to these, we have got the hæmatoid variety, or fungus hæmatodes, in various stages, in combination with the others. In one of these delineations you perceive that the peritoneum is studded with tumours of various sizes, and within a circumscribed space of a few inches there are seen all the varieties of carcinoma which I have named, in their successive stages of development, &c.”

Here are united in one tumour anatomico-pathological indications of the coexistence of several distinct varieties, circumstances, however, which I perfectly agree with Dr. Carswell in believing to be “ strong evidence of their being merely modifications of form of one and the same disease, rather than distinct morbid products accidentally combined in the same tissue or organ.” Dr. Carswell does not name that “ one and the same disease,” further than by referring it to the class or order of cephaloma of his specific division. A reference to which, as already shown, belongs to encephaloid or fungoid diseases, and their various combinations.

Scirrhus of the breast is, according to Sir A. Cooper, from two to three years in growth, and from six months to two years in destroying life after it has reached its acme. Velpeau estimates the mean duration of encephaloid of the breast at from six to twelve months. The same rules may be applied in a general way to those diseases elsewhere, with an exception in favour of cancer of the skin, which generally persists for a much longer period from its first invasion to the fatal result.

The foregoing cases point to two great divisions or species of malignant diseases of the skin of the trunk and extremities, and also to some, not common appearances, which they sometimes assume when they fall upon that portion of the mucous surfaces supplied with epithelium.* Possessing, as these dis-

* This subject will be alluded to in a more particular manner, when malignant diseases of the internal organs and the bones shall be under consideration.

eases do, several points of resemblance, not alone as regards their seat, general outward appearance and symptoms, but also in their anatomical, chemical, and microscopical manifestations. Still, however, they differ widely from each other in many essential particulars, but chiefly in their onward progress and practical results or terminations.—The one (cancer) at certain periods, and under certain circumstances, admitting of occasional, I had almost said, frequent cure; the other (encephaloid, hæmatoid or fungoid), terms which seem to be applied separately to different stages or forms of one and the same disease, and which, as far as my experience extends, is *never permanently* cured.

The differences of these products, as they fell upon the skin of the trunk and extremities, may be exhibited tabularly.

Fungoid Disease.

Usually commences in the subcutaneous cellular tissue; is lobulated, and resembles cerebral matter.

Is highly vascular; less hard than scirrhus; and is puffy or elastic under pressure; also a dusky dull colour.

The predominant microscopical elements are globules, not always distinctly cellular, and caudate corpuscula.

Is less circumscribed, and usually attains a large size within a comparatively short period.

Scirrhus and Cancer.

Rarely commences in the subcutaneous cellular substance, but in the skin; resembling, when cut, the rind of bacon with cellulo-fibrous septa.

Is ill supplied with vessels, and firm to the feel; is of a shining bluish clear colour.

The main microscopical constituents are juxta-posed nuclear cells; caudate corpuscula do not exist in it.*

Its outlines generally well defined, and rarely acquires large dimensions.

* Müller, Op. cit.

Fungoid Disease.

Is frequently the seat of hæmorrhage.

Subcutaneous tumours are slow to contract adhesions with the skin.

The progress before, but especially after ulceration, is very rapid.

Relapses are frequent after operation.

Is most frequently observed in young subjects.

Does not extend itself in the line of the absorbents.

Scirrhus and Cancer.

Is rarely the seat of those changes.

Scirrhus thus situated becomes quickly adherent.

The rate of progress after ulceration is frequently slow, never so rapid as in fungus.

Cancer of the skin is often cured permanently by excision and otherwise.

Seldom (never according to my experience) occurs before the 28th or 30th years of age.

Usually does so.

Cancer is a disease anatomically characterized by the presence of scirrhus. In the skin, however, it usually originates in a wart, tubercle, horny excrescence, simple induration, or ulceration, having the properties of assimilation and reproduction, and in *every instance* running on to the destruction of life, unless when checked by art; which can only be done so long as the disease *seems* to possess a local character.

Cases I. and II. afford sad proof of the insufficiency of Nature, unaided by art, to rid herself of cancer originating in a wart, or hardened excrescence of the skin. The result in those cases, contrasted with No. V., teaches this practical lesson, namely, always to remove by suitable means, **as** speedily as possible, all suspicious indurations of the skin occurring in subjects of any age near or after the meridian of life.

Cases III. and IV. give evidence of the well-known fact, viz. that cutaneous cancer falling upon cicatrices, or newly organized adventitious cellular membrane, is comparatively extraneous to

the circulating system, and is slow to produce a constitutional taint.

Case VI. affords proof of the removal, without operation, of a wart-like induration of the skin, such as we see usually to terminate in decided cancer.

Case VII. is an example of cutaneous cancerous ulceration of the skin, commencing without any appreciable tubercle; and if such did exist it was of a few hours' duration only.*

Case No. VII. further exhibits the important practical fact, namely, that the apparent presence of the cachexia carcinoma is not always a bar to successful operation.

Cases VIII. and IX. are examples of that tuberculated form of cutaneous cancer which is late in implicating the glandular system, and which seems not to be transmitted in the line of the

* This form of cancer is often so like herpes exidens, the following distinguishing marks will alone enable the practitioner to diagnosticate between them:

Herpes.

Spreads rapidly, and after an uncertain, but not a remote period, it heals in large patches, or in its entire extent.

The lymphatic glands in the groin or axilla rarely enlarge.

Is unattended by sharp lancinating pains.

Often, especially at a late period, attended with, or accompanied by bronchitis, colica, or a cachexy, resembling the cancerous, so exactly as to bid defiance to all attempts at discrimination.

Seldom ends in the destruction of life.

Cancerous Ulceration.

Advances steadily, but surely; if any portion of its surface heals it is always small, compared with the general size, and such imperfect cicatrizations speedily give way, and again form a part of the foul ulceration.

In cancerous ulceration the lymphatic glands on their upward course frequently enlarge, sympathetically at an early, and from the cancerous taint at a later period.

Cancer has lancinating pains constantly or periodically.

Chronic bronchitis may coexist with this form of cancer, but cancerous ulceration of the stomach is a far more frequent accompanying symptom, and great debility; cachexia, not always a bar to operation.

Always does so.

lymphatic or vascular systems. The organs which become secondarily affected in these cases are the liver, lungs, stomach, intestines, and renal capsules, pretty much in the order in which I have named them. Case IX. is evidence of the important practical fact, namely, that early and free excision may prevent the contamination of the internal organs.

Case XI. exhibits an example of what Mr. Abernethy would call sarcoma, combined with partial melanism, or nigrites, but what various other authors would call, more correctly I think, an erectile tumour, with accidental melanotic deposit. The entire history of the case is opposed to the notion of its being malignant.*

The concluding cases point to the fungoid disease, as it is usually found to assail the skin and subcutaneous cellular tissues.

Case XII. is an example of the fungoid disease, originating in what would seem to have been a benign erectile tumour of the mucous surface of the œsophagus, and coexisting with true scirrhus in a separate tissue and parts.

The subsequent cases, especially the last, No. XIV., and that of Dr. Carswell, exemplify the coexistence of true scirrhus and the fungoid disease in one and the same diseased structure; here, however, is no evidence of any part once the seat of one species of malignant disease, changing, as stated by Dr. Carswell, into another, e. g. scirrhus or cancer, and fungus or encephaloid maintains to the last these peculiar respective characters so well described by various authors.†

* During pregnancy, patches of nigrites are often observed on the abdomen, around the nipples, and also upon the face. Such partial discolorations are more frequently observed on the genital organs and in their neighbourhood, than in any other part of the human body. The tongue of a lady, a friend, and often an arthritic patient of mine, has sometimes been covered over for weeks together with an indelible bluish black coating; this appearance never occurred but during one of her protracted but *mild* paroxysms of gout.

† Sir Astley Cooper (Observations on the Structure and Diseases of the Testis,

From the foregoing cases may be inferred—

1st. That cancer of the skin of the trunk and extremities is slow in vitiating the system, so as to render abortive the excision of the affected part, which of all remedial means is most deserving of confidence.

2nd. That cancer of cicatrices, no matter how produced, rarely relapses after free excision.

3rd. That the sallow, worn aspect, denominated cachexia cancirosa, is not always a true indication that the disease has taken possession of the system, so as to render an operation hopeless.

4th. That the tuberculated form of cancer often admits of cure previous to the glandular system or the internal organs or viscera becoming diseased, which they usually do where a large number of such tubercles are developed upon the skin.

5th. That certain caustic or escarotic medicines, such as have been already referred to, are often sufficient to cure cancer of the skin in its earliest stages; but are rarely to be preferred

1830) thus diagnosticates the fungoid disease, which term he cautiously uses in contradistinction to that of scirrhus or cancer. “The nature of the disease is, like that of every morbid growth, enveloped in obscurity, but yet the more palpable characters are not beyond our ken. It differs from common inflammation, in soft fibrine being effused, instead of the healthy and solid albumen of the blood. Its texture allows of organization in some parts, but in others it is too weak to support the blood-vessels shooting into it, and the blood is extravasated in consequence. In some parts serum is effused, and cysts are found which contain a fungus in the interior. When injection is thrown in by the arteries, and sections made of the disease, some parts are coloured, whilst others are entirely unorganized. When injection is thrown in by the veins, they are found very large and varicose.

If the fungus produced by the disease be carefully examined, some parts bleed from the slightest touch, in consequence of the frailness of the coats of the vessels, and others slough from the want of organization, &c.

The two forms (i. e. ulceration and infiltration of the submucous cellular tissue) in which cancer usually falls upon the mucous membranes, are beautifully and accurately delineated by Cruveilhier.”—Liv. 33, Pl. i. *Inflammation Chronique. Cancer du Rectum.*

to free excision, unless to meet the objections or prejudices of patients.*

6th. That true cancer and fungus, or encephaloid of the skin, are clearly distinguishable from each other, the one being a disease frequently admitting of permanent cure; the other, whether simple or combined, rarely, if ever, doing so.

7th. That melanosis sometimes falls upon benign tumours, and therefore is no test of malignancy in those of a contrary description, where it is often found.

8th. That the term cancer should not be used in conjunction with encephaloid, melanodes, medullaris, fasciculatum, and hyalinum. These latter terms expressing but varieties of the fungoid or encephaloid disease.

ART. IV.—*Observations on Exostosis of the Spine, with Cases.*

By FRANCIS BATTERSBY, A. B., M. B., Licentiate of the Royal College of Surgeons in Ireland, one of the Medical Attendants of the Institution for Diseases of Children, Pitt-street, and formerly Assistant Demonstrator of Anatomy, in the School of Medicine, Park-street.

EXOSTOSES, or bony vegetations, arising from the bodies of the vertebræ (independent of any disorganization of these bones) are by no means of rare occurrence; most pathological collections contain numerous examples of their different stages, especially of what seems their natural termination, viz.: perfect ankylosis of the affected bones.

This ankylosis may be more or less extended, affecting but two neighbouring vertebræ, or perhaps the greater part, more rarely the entire of the vertebral column, while the new bony material is found to vary from a thin lamina to a prominent and rough projection, occupying the situation of, or more properly covering, the subjacent intervertebral cartilage.

* See Dublin Journal, September, 1842, pp. 60, 61.

The different varieties of this morbid union of the vertebræ, as modified by the particular part of the spine so affected, are not noticed by writers on the subject. Wenzel is the only one I find who treats of them in detail. The peculiarities he mentions, though admitting of exceptions, are so well founded on reality, that I shall lay them before the reader.*

“ In ankylosis of the cervical vertebræ,” he says, “ the vertebral bodies appeared fused into one uniform piece, in most of the cases he had seen or heard of, without any well-marked new bony lamina being formed. In ankylosis of the dorsal vertebræ, we commonly find a peculiarly formed bony lamina, less frequently—merely a bony clasp (*Knochenleiste*), extended over the outer surface of the vertebræ, subject, however, to many varieties. Most commonly we find the vertebræ on the right side firmly connected (*fest und stark*), while on the left they are completely free.* If the uniting lamina exists on the left side it is at the same time found on the right, and that in a much more marked degree, and thicker. Amongst many examples, he possessed only three, in which the new bony lamina was on both sides. The situation of the aorta seemed to him to be the cause of this difference.

The lumbar vertebræ are ankylosed in a different and well marked manner. We commonly see them united two by two, and that neither in the entire circumference of their bodies, nor yet by a single bony clasp (*Knochenleiste*), running along one or the other side. They are commonly joined by a well-marked rounded bony collar (*Knochenwulst*), which lies in the form of a thick circumscribed knob (*Knopf*), on both sides of the bodies of the vertebræ, which, in the centre, are free and separate.

* Cloquet, as if an original observation, observes upon this as a frequent occurrence, without ascribing it to any particular region; he says, “ I have seen these plates in many subjects limited to one side alone, and stopping abruptly at the median line of the vertebral column, as if one side only of this had been affected.”—*Med. en 21 tomes* 1833, Art. “ *Ankylose*.”

† Carl Wenzel, *über die Krankheiten am Rückgrathe*.—Bamberg, 1824, in folio, p. 129, et seq.

“As to the processes, the oblique are those most often ankylosed, and frequently such is the only ankylosis present; and when it exists in the spinous processes, it presents the appearance as if the bony material had dropped from one to the other (als ob die Knochenmasse von einem spitzen Fortsatze zum andern herunter getropft wäre). The arches of the vertebræ are seldom united by bone; those of the neck are most frequently affected, and they then seem, as it were, fused together (zusammenschmelzen.)

“In cases of most extensive ankylosis, and where the bony mass is very great, we find the openings for the nerves and arteries, and the joints of the ribs, specially exempted.

“As to ankylosis of the vertebræ from ossification of the intervertebral cartilages, a superficial view would lead us to suspect that it was of very frequent occurrence. A more exact examination proves the contrary. These bodies are seldom ossified. It is remarkable, that when such is the case, we find no new bony material on the surface of the ankylosed vertebræ; at least, I have never known an instance of the kind.”

Notwithstanding that this condition of the vertebræ is so common, Wenzel, like most writers on the subject, does not attempt to connect with it any well marked symptoms during life. Shaw says, “ankylosis and exostosis of the vertebræ is sometimes connected with a general bend forward of the whole spine;” and, “from numerous examples of ankylosed spines, without any curve or other mark of disease, I think we have an explanation of the cause of these anomalous symptoms of weary pains in the back, in the parts within the pelvis, and in the legs and thighs, which many patients suffer, although they have not any curve of the spine, and do not even wince or shrink unless the vertebræ be rudely pressed.”*

This general absence of severe pain is the more remarkable, considering the displacement and injury those important nerves

* Shaw on Distortions of the Spine and Chest, p. 108.

must undergo, which are so closely connected with the front of the spine, more particularly in the lower part of the dorsal and lumbar regions. That they do thus occasionally suffer (producing most important consequences), will, I think, be shewn by the following cases, in both of which all who saw them, including two distinguished surgeons of this city, were entirely baffled in their diagnosis, and only became acquainted with the real nature of the disease after the patients had sunk under it.

The novelty of the subject must be my excuse for the length of the following interesting and very distressing case :

J. ———, Esq., æt. 58, a country gentleman of most active disposition and temperate habits, used constantly to enjoy the sports of the field, and up to the period of his last illness possessed uninterrupted good health, with the exception of an attack, many years previously, of what his friends called bile, from which he recovered at Cheltenham.

On the 4th January, 1839, while in the act of tightening his saddle girth, being seated on horseback, his right clavicle snapped across near the centre; it had been the seat of pain during a few previous days, and during the preceding four or five months he had been observed to decline in looks, his natural vivacity and energy had forsaken him, and he disliked the exertion of entering society. He had also suffered from pain, experienced at night, referred to the bottom of the sternum, and, in a few weeks after, from most excruciating pain about the right scapula and side of the chest. It was most severe at night, opiates and blisters afforded some relief. He continued to be affected in this way until the end of April, when he was so far improved as to be able to do business abroad, and even to go out hunting. Exercise at this period did not bring on or increase the pain. He walked with a stoop, which had now become habitual. His complaint was considered to be rheumatism, yet no remedies prescribed with this view had ever the least good effect.

The fracture of the clavicle had united in the usual time,

with scarcely any displacement, but with the formation of a large callus, which augmented slowly but continually, so that in the month of June it had attained the size of a turkey's egg. It was smoothly rounded, felt like solid bone, was without pain, and the skin over it was unattached and natural.

On the 16th of this month, while crossing his room, he was seized with a severe sudden pain across the loins, as if, to use his own expression, he had been struck with a stick. This pain continued unabated on the 22nd, the time of my first being in attendance on him; he then suffered cruelly from it, together with a dull pain across the chest.

From the supposed nature of his complaint a constant perspiration was encouraged, which was profuse and clammy; he took but very little nourishment, and his strength was extremely reduced; the countenance was wan and haggard, and he was very despondent. On the 23rd he began to sink rapidly; the thighs and arms having become cold; but by the administration during the day of a couple of bottles of wine, with jelly, he was restored to comparative strength and looks. During the two succeeding days he remained free from suffering, and entertained hopes of recovery soon destined to be overthrown.

A careful examination to discover if possible the seat of his disorder, could detect nothing abnormal in the vascular or respiratory organs. The head was quite unaffected; the abdomen was full, in particular the left hypochondriac region (now the chief seat of pain), owing to gaseous distention of the stomach, which ascended high beneath the ribs. He had had repeated purgatives, which required to be extremely active to take effect, without lessening these symptoms; and he used to remark, that he felt as if the bowels were never properly emptied. He could not bear pressure on the upper part of the abdomen. Percussion of the spine was unattended with pain. The tumour of the clavicle was now the seat of an obscure pain.

No description of treatment afforded the least relief; opium alone calmed the pain, and he experienced great temporary gratification from having the skin in the middle of the back forcibly scratched, and the more roughly this was done the more agreeable it was.

About this period he was visited by Dr. Colles, who could form no opinion of the case, but suspected some malignant growth in the abdomen.

On the 30th of June he was as weak as usual, but tolerably cheerful; he complained of loss of sensibility of the skin over the upper part of abdomen, and the next day of numbness and diminished power in both the lower limbs, which felt to him heavy. There was also some difficulty in voiding the urine, and for that purpose he was obliged to raise himself in bed upon which it flowed pretty readily. There was great depression of spirits; the pulse was 70, and natural.

On the 4th July the loss of sensibility in the skin was most marked in the feet (which required to be artificially heated), it was less so in the thighs. He was seized in the afternoon with most terrific pain in the back, the left hypochondrium and left knee, attended with great prostration and cold clammy sweats. He was sometimes tolerably free from pain, a certain degree of which was always present in the back, with a feeling of tightness and oppression about the epigastrium, felt, when severe, as if he were bound firmly with a strap, or as if an immense weight were laid on the part. The paroxysms observed no regularity as to the period of access, their number or duration, but in general he had two or three in the twenty-four hours, lasting half an hour or more. During their severity the action of the heart, at other times natural, became indistinct, as if drawn back from the walls of the chest, the pulse being small with increased hardness; the muscles of the thighs also became rigid, and the hamstring tendons more tense than usual. On these occasions, though of a peculiarly mild and tranquil temper, he used to scream aloud,

or cried and wept. There was constant rumbling in the intestines.

On the 6th July he complained of increased loss of power in legs; their temperature was much diminished; his general strength much reduced, and there were twitchings of the muscles during sleep. The tongue was moist; pulse 100; paroxysms of pain as usual. On the 8th, the pulse began to intermit, and, on the 11th, the feet, from having fallen in temperature, were morbidly hot, with sense of formication, and painful when handled. The tongue dry in the centre, with brownish fur. The integuments of sacrum stripping, but his countenance was animated, and he could pass water naturally. A curve, posteriorly, of the lower part of the spine was now observed, it engaged the two inferior dorsal and the superior lumbar vertebræ. Percussion over the spines of those caused severe pain, which radiated forwards over the chest and abdomen, and downwards to the knees, being of a similar description to that experienced during the paroxysms.

On the 12th July, at one p. m., he fell into a soporose state; the limbs starting, and the eyeballs turned up. Being roused from this, and feeling as if about to die, he caused his family to be assembled and took leave of them, giving advice to each.

On the 19th the startings of limbs and talking in sleep had disappeared; he still continued to grow weaker, and was becoming much emaciated. The pulse, in general 100, small and feeble, was very variable, and the paroxysms of pain were become much less excruciating than formerly, though still very severe, and they lasted much longer, sometimes for six hours at a time, with hurried respiration. In the intervals, the feeling of constriction of the chest and weight remained; the curve of vertebræ was increased, and he complained of diminished sensibility of the lower part of chest and upper extremities, strong pinching of the skin being scarcely felt, and he could not raise the legs without the assistance of his hands.

On the 1st August he was very much sunk, despondent and impatient. The pulse 120, variable and very feeble ; the tongue dry and shrivelled. Even pressure on the prominent vertebræ caused pain at epigastrium, and he could not bear it to be made over the abdomen, yet the paroxysms of pain were very much less severe.

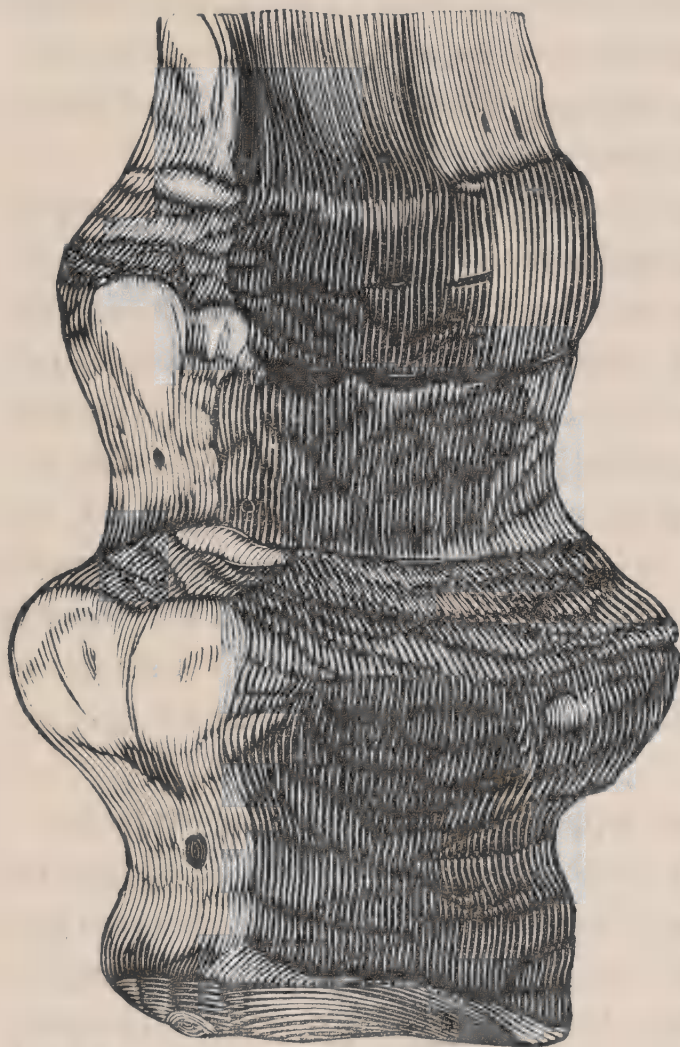
The bowels all along obstinate, and yielding only to the strongest purgatives, as croton oil, latterly required to be assisted by enemata, and he was now so weak that it was necessary to receive their contents (never deficient in bile) on cloths, placed under him in bed for the purpose. On these occasions a large internal pile used to become constricted by the sphincter ani, and its reduction was always very painful. The sore on the nates was healing up. The urine, in general high coloured, was natural.

On the 5th of August he had been without raving or startings of limbs for two days ; his countenance was tranquil and expressive, and the belly, still tender on pressure, had become at length flattened ; weakness extreme ; pulse 126, feeble ; the respiration and skin were natural. He remained much in this state until next day at noon, when raving and cold perspirations came on, and continued increasing until evening. At seven P. M. he became insensible, and the extremities cold ; the pulse failed ; the respiration was laboured, but without tracheal rale ; and he expired tranquilly at ten o'clock, P. M.

The examination of the body was made, 18 hours after death, in the presence of Dr. Byron of Navan, who had visited the case regularly from the commencement.

There was great emaciation ; the abdomen sunken ; the lungs were quite healthy, as also the heart and its appendages, though its substance was somewhat flabby. The gall-bladder was distended with brownish-coloured bile, and there were no calculi in it or any of the ducts. Old membranous adhesions existed between it and the colon, and the surface of the liver was also similarly connected with the adjoining peritoneum.

Nothing unusual could be detected in the aorta or large vessels. The kidneys were also healthy, likewise the intestines.



On displacing the abdominal viscera, the inter-vertebral spaces of the lumbar region were at once observed to be singularly prominent, the cartilages being partially faced with irregular bony protuberances, so as nearly to unite the adjoining bones. A section of the vertebræ was removed, and a large nervous twig was discovered lying stretched over the most prominent of the new formations which engaged

the sides of the vertebræ. The anterior vertebral ligament had a marked glistening appearance, and on dissection proved to be very much thickened, while underneath it was formed a new dense structure of a fibrous nature, in which all the characteristics of the periosteum were lost, and the surface of the bones, to which it was intimately adherent, was rough and irregular. There was no distinction between the fine cancellated structure of these and their new processes. The bones were quite healthy, as also the cartilages. An anterior view of the section referred to is presented in the above woodcut.

The spinal canal was opened from the sacrum to the middle of the dorsal region. There was about an ounce of clear fluid

in the interior of the sheath of the cord, which, like its membranes, was perfectly natural. The only irregularity here discoverable were two little points of bone on the posterior aspect of the bodies of the dorsal vertebræ, which felt through the dura mater, which was unremoved, about the size of pins' heads. The openings for the nerves were perfect.

The tumour of the clavicle was solid bone, having on part of its surface the fibrous character.

The head was not examined, being considered unnecessary.

This gentleman's sufferings, for the space of nearly two months, could not be surpassed. The extent of the torture he endured could scarcely be imagined by any one who had not witnessed it, and most distressing it was for those who did, not to be able to afford the least relief, except by the administration of opium, which was given in increasing doses, so that towards the conclusion, he used to consume more than a scruple of muriate of morphia daily, and that merely with the effect of mitigating the pain.

It was at one time supposed that he laboured under aneurism of the aorta, although the stethoscope failed to discover any sign of its presence, and the fullness of the abdomen prevented any satisfactory examination of that part; besides, the pulse was natural; still it must be confessed, that the character of the symptoms bore a great resemblance to Dr. Beatty's remarkable case, and it may not be amiss to remark, that the nature of the pain coincided exactly with what Dr. Law (in his valuable paper in a late number of this Journal) considers to be pathognomonic of that disease. In drawing this conclusion, Dr. Law could not, of course, contemplate such an occurrence as I have given an example of, as it has been now noticed I believe for the first time. The origin of the pain will be shown to have been similar in both instances.

From the period, however, of the occurrence of the paralytic symptoms, coupled with prominence of the vertebræ, the case, until the end, was considered one of caries of these bones (how-

ever unusual in this disease the extent of some of the symptoms might be), and was treated accordingly. There was “the pain and tenderness of skin, sense of constriction of the chest, obstinate constipation, the cramps of the lower limbs, disturbed state of the functions of the alimentary canal and urinary bladder;”* and of the paralysis, it may be said, to use Pott’s words, that it was “essentially different from common nervous palsy; the legs and thighs were rendered unfit for all the purposes of locomotion, and had also lost much of their sensibility, but still they had neither the flabby feel which a truly paralytic limb has, nor had they that seeming looseness of the joints, nor that total incapacity of resistance which allows the latter to be twisted in all directions.”†

That all these symptoms had no sort of connexion with any disease affecting the brain must be evident from the narrative of the case, the most attentive and constant observation during its progress not being able to detect the slightest manifestation of anything like it, added to which, the best authorities seem undecided as to the cerebral origin of paraplegia;‡ Abercrombie

* Brodie on Diseases of the Joints.

† Pott’s Works, vol. iii. p. 238.

‡ In Guy’s Hospital Reports for 1838, p. 17, is an important paper by Mr. Aston Key, “On Paraplegia depending on Disease of the Ligaments of the Spine,” which he attributes to over-extension of the posterior ligament of the bodies of the vertebra, producing “in the young, inflammatory swelling, or yielding of its fibre and absorption,” while “in those advanced beyond the middle period of life, the unhealthy or feeble condition of the ligament of the spine is productive of bony effusion, as is frequently seen along the anterior spinal ligament and intervertebral substance, which present a bony ridge, and induce a permanent bony ankylosis of several vertebræ.”

In the first case he gives, “the ligaments, covering the intervertebral substance, between the second and third lumbar vertebræ, were found hardened and prominent, and projected so far into the canal as to diminish it by one-third of its diameter.” In the second, “the intervertebral substance, above the twelfth dorsal vertebra, with the ligament covering it, presented a slight ridge projecting into the medullary canal, as if ossification from the edge of one bone tended to unite with a similar growth from the opposite edge.”

In these cases, the nature of the morbid change seems precisely similar to what

“doubts whether paraplegia ever arises from disorders confined to this organ.” Few can imagine that the occasional raving was any indication of this. It arose from the state of exhaustion and nervous irritation, combined, perhaps, with the effect of the opium. It was present in Dr. Beatty’s case of aneurism. The paroxysms of pain and the spasms connected with the local tenderness were sufficient to prevent our referring them to that source, and that they were of spinal origin will be manifest, after reflecting on the true cause of their presence in most cases of caries of the spine, in which they are too often erroneously set down to the effect of pressure on the cord, such cases being always either fatal or irremediable.

The symptoms attributed to pressure on the cord are not observed to be in proportion to the deformity; the most extreme degree of which does not prevent persons living in the enjoyment of all their functions. Nature, indeed, provides in such cases for the integrity of the spinal nerves, and even enlarges the vertebral canal at the curve to ensure the safety of the cord.

They are often the first observed, and exist in cases in which the surface only of the bodies of the vertebræ is diseased, as Wenzel states.* Pott says, “the useless state of the limbs is by no means a consequence of the altered figure of the spine, or of the disposition of the bones with regard to one another;” Abercrombie, that “it is the inflammatory action of the parts which deranges the function of the cord;” and Brodie attributes these symptoms to “pressure on the cord or irritation propagated in some way or other to this important part of the nervous system.” A convincing example of the effect of this irritation is found in

produces exostosis, as it usually is called, when the anterior vertebral ligament is affected; and the cause of the prominence of the ossific growths seems to depend on the thickening of the ligaments, as well as on the unequal pressure exercised on the intervertebral substances. In one of Mr. Key’s cases, there was a degree of angular flexure forwards at the point of disease.

* Opus cit. p. 106.

those cases of caries of the cervical vertebræ, in which the arms alone are affected, while the lower extremities remain under the control of the will, which could not be the case if compression or disorganization of the cervical portion of the cord existed.

It should also be remembered that "hysteria produces symptoms closely resembling caries of the vertebræ, even to the extent of actual paralysis of the lower limbs, and difficulty in voiding the urine," as Brodie remarks;* and these symptoms may be prolonged a considerable time if improperly treated. The irritation of the gums in the process of teething will also induce paralysis, and, as I have seen, the presence of an *ascaris lumbricoides* in the intestines, will be attended with permanent and rigid flexion of the thigh, continuing until the expulsion of the animal. In all these instances the irritation of the spinal cord and its reflex actions are most marked and striking, yet the symptoms all disappear on the removal of the exciting cause, and of course leave no traces of organic lesion behind them.

Applying these considerations to the case in question, the conclusion follows, that the new bone, in occupying the situation of the lumbar ganglia of the sympathetic, gave rise to the symptoms of visceral neuralgia, by irritating these and their branches, while the same irritation communicated through the lumbar nerves (which are in direct connexion with the former) to the spinal cord, its functions became deranged both above and below the point of irritation, exhibiting what Dr. Marshall Hall denominates, the morbid, direct and retrograde, action of that part.†

I am not disposed to consider as of any importance the points of bone found projecting into the spinal canal, they seemed too minute to cause any bad effect, but it is not improbable that the constant dull pain in the back was due, in part at least, to the state of chronic inflammation in which the ligamentous structure

* On Local Nervous Affections, p. 46.

† Vide Dr. M. Hall's instructive work, "On the Diseases and Derangements of the Nervous System," pp. 43 and 224, *et seq.*

Dr. F. Battersby on *Exostosis of the Spine*.

in front of the spine must have been. The progress of the paralysis was very remarkable as pointing to the spinal origin of the symptoms. It first appeared over the upper part of the abdomen, then attacked the lower extremities, and lastly, the integuments of the chest and arms.*

If it be the fact that the distressing and formidable disease known by the name of angina pectoris, to which this case bore some resemblance (particularly in the spasmodic affection of the diaphragm), be caused by ossification of the coronary arteries, disease of the valves of the heart, or some, to all appearances, much more inadequate cause, there can be the less difficulty in admitting the solution which so naturally presents itself in the case before us ; and if it be asked, why exostosis of the spine does not more frequently produce bad effects ? it may be answered that few of the many wounds of the fingers and toes are followed by tetanus ; and it is a well-known fact, that aneurism of the aorta, sometimes the cause of intense suffering, is in many cases unaccompanied throughout by the slightest pain. A careful examination of the nerves is the most likely means of explaining these discrepancies. The case under consideration may, perhaps, be considered to throw some light on the cause of severe pain in the latter disease. According to Dr. Law's experience, it is most common " where the aneurism is connected with the posterior part of the artery, and with destruction of the vertebræ." He concludes, " that it is not the connexion of the aneurism with the ganglionic and sympathetic nerves to which it is due," for the reason, " that hepatic aneurism has been observed to give rise to little pain, although it must have engaged

* It was not until after this was written, that I became aware of the existence of Mr. Stanley's Paper in the Med. Chir. Trans. v. xviii. wherein he shows the occasional dependence of paraplegia on disease of the kidneys. In the reciprocal influence of affections of the spinal cord on the functions of the kidneys, and of diseases of the latter on the cord, it is only through the medium of the ganglionic nerves that this can be effected, and such cases afford a strong confirmation of the paraplegia in this case having resulted in the way I have endeavoured to point out.

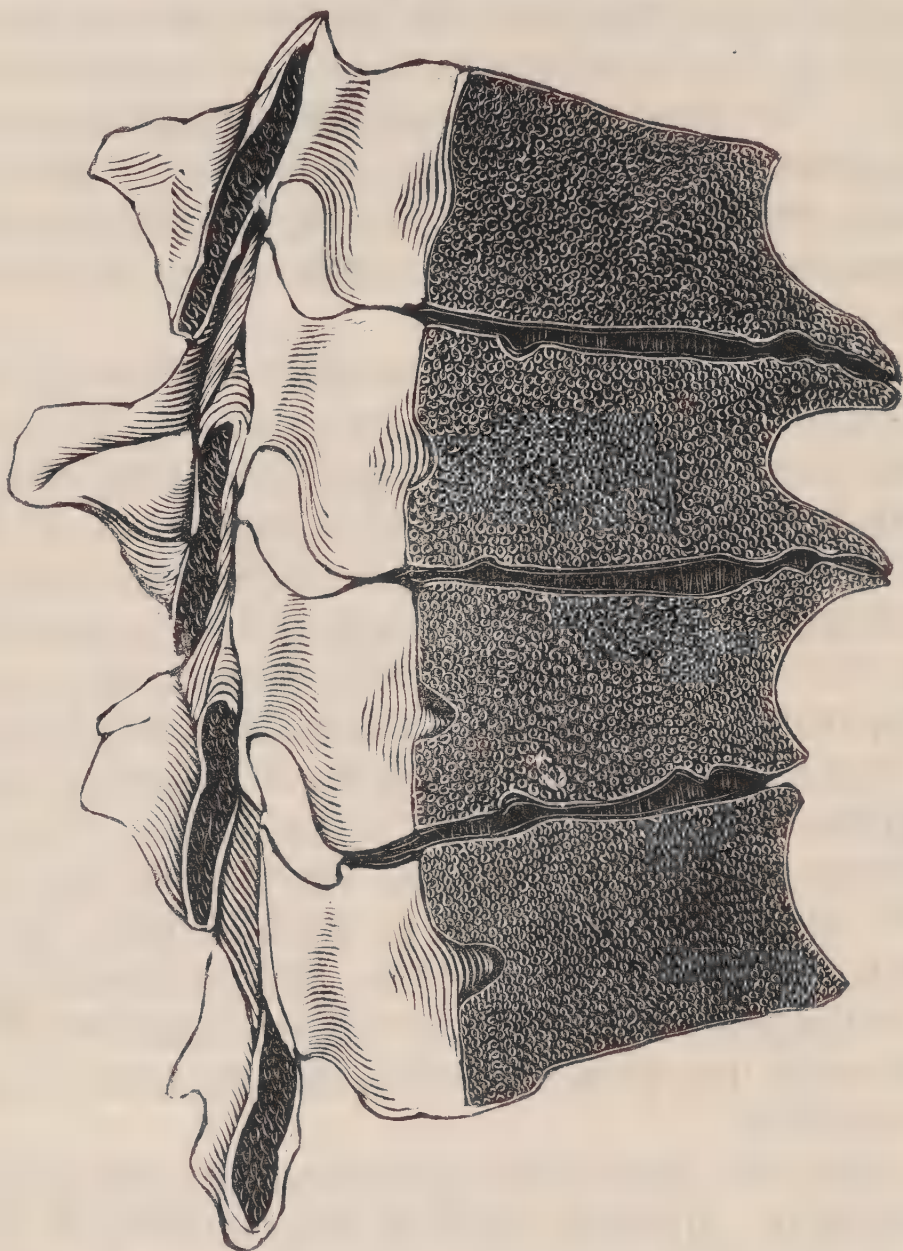
the hepatic plexus of nerves." Allowing Dr. Law's opinion all the weight it justly deserves, he seems to have forgotten, in drawing his conclusion, that in the latter case there is no resisting solid body like the spine to oppose the displacement of these parts. It is otherwise in aortic aneurism of the posterior part of the artery; here the tumour, in its efforts to enlarge, irritates and injures the nerves so closely connected with the spine, thus giving rise to symptoms such as existed, and for the same reason, in the case before us.

Since the occurrence of the case already detailed, my friend, Dr. Hill, Curator of the Museum, Park-street, has placed in my hands a preparation exhibiting exostoses of the eighth, ninth, and tenth dorsal vertebræ, as represented on the next page. Dr. Hill informs me that the person, from whose body they were taken, was a middle aged gentleman, who had laboured for a considerable time under anomalous and very severe nervous symptoms, supposed to be connected with aneurism, and characterized by pain in the back, shooting from this over the chest and all the body: and that, having been exhausted by his sufferings, there was nothing discovered on examination after death but these exostoses, which, by interfering with the splanchnic nerves, were no doubt the cause of all his symptoms. They projected to such an extent, and were of so great breadth, and so very irregular at the margin, that it was not possible for those nerves to escape serious injury.

That I can give no further particulars of this case, I regret exceedingly. It would have been very interesting to know whether it was attended with any paralysis.

It will be observed, that in the first of the cases related, the character of the exostoses conformed exactly with Wenzel's description of those of the lumbar vertebræ, while in this they so far coincided with the peculiarity ascribed by him to exostoses of the dorsal region, that, occupying the right principally, they did not engage the left side of the vertebræ, but ceased abruptly near the median line. That they were prolonged forward and

did not coalesce, is probably to be accounted for by the want of repose of the parts during development, as Delpech remarks.*



I shall conclude these observations by noticing a case of exostosis and ankylosis of the cervical vertebræ, which, though not attended with the severe symptoms of the two preceding, still possesses much interest. It is chiefly remarkable from the great degree of deformity present, and its close resemblance to disorganization of the vertebræ, while the real nature of the

* De l'Orthomorphie, t. 1, p. 324.

morbid alteration was not suspected until after death, which occurred from a different cause.

The subject of it was a stoutly built man, hall-porter to a gentleman of rank. At the time of his death he was 38 years of age, and during the two last of his life had been considered to be affected with ulcerative destruction of the cervical vertebræ by some most experienced practitioners, who also dreaded the same affection of the ligaments connecting that part with the head. He had been subject to severe headach, with vertigo; his vision was disturbed by motes, and he had occasional hysterical fits, with crying. There was a general and gradual bend directly forwards of the neck, the head being inclined to such a degree that he could with difficulty see his way before him, which was assisted by raising his eye-brows—the forehead becoming deeply wrinkled.

The spines of the vertebræ were somewhat prominent, and striking them caused severe local pain, which also shot down the arms. He could neither raise nor turn his head: when he wished to do either, he accomplished his purpose by a motion of the lower part of the spine. He suffered considerable pain, which was much worse at night, and he could not turn himself in bed without sitting up. There was no dysphagia, nor crackling sensation in endeavouring to rotate the head. The voice was natural but feeble, and he complained little of the weight of the head, and never thought of supporting it when changing from one position to another. His countenance was good, and not expressive of pain. There was no paralysis. He had been treated by cupping and blisters, which were kept open, and of late was relieved by the use of yarrow and aconite.

For the foregoing notes I am indebted to the kindness of Dr. Croker, by whose permission I am enabled to give the case. The examination of the body was made by me 26 hours after death, in the presence of Drs. Croker and Lees—Sept. 12, 1842.

The muscular system was extremely lax; the legs highly œdematous, and covered with light red ecchymoses, and long streaks of the same colour where the skin had been scraped by

the finger before death. The abdomen was slightly discoloured from commencing putrefaction. The dependent parts of the body were livid. The curve extended to the third dorsal vertebra.

As the body lay on the back for examination, the head remained elevated three inches above the board, owing to the rigidity of the vertebræ of the neck, which strongly opposed any attempt to depress it. The head was fixed on the latter, with which the jaw formed an acute angle, and could not be rotated.

In removing the soft parts in front of the neck, the cellular tissue, enveloping the nerves and vessels of the right side, from the larynx to the clavicle, was observed to be thickened, and of a yellowish green colour, being apparently infiltrated with pus, yielding, however, nothing but a little opaque serous fluid by pressure with the edge of the scalpel. This colour and appearance was most marked about the larynx, particularly in its aryteno-epiglottidean folds, which also were much thickened. All this was wholly unconnected with the bones behind, which, still covered by the anterior spinal muscles, could not, in this stage of the dissection, be said to have undergone any morbid change. The muscles at the back of the neck were much wasted and pale.

On closer examination, the bodies of the six inferior cervical vertebræ, as well as those of the last cervical and first dorsal, were found united by true ankylosis—irregular and rather prominent plates of bone of finely porous texture being developed on the surface of the vertebral bodies, but especially in front of the intervertebral fibro-cartilages, which were only in parts to be seen. These bodies, where uncovered, were of a deep red colour, as if infiltrated with blood; they readily separated from the bones, and exuded by pressure a bloody serum. The lateral articulations of the second and third, fourth and fifth, and of the last cervical and first dorsal vertebræ, were also ankylosed, with slight addition of bone round the margins, and the other corresponding articulations were advancing to the same state; osseous granulations and spiculæ surrounding their margins, while the investing cartilages were either partially absorbed or loosened, and the joints contained a sanious fluid.

The occipital bone was cemented to the atlas ; but the articulation between the latter and the second vertebra, was unaffected. Motion between them was prevented by the union of the transverse ligament and the processus dentatus, while a collar of bony granulations existed all round the surface, articulating this process with the atlas, and formed a ridge on its summit. The investing cartilage of this articulation was also partially absorbed round the edge. The uniformity of the spinal canal was not interrupted, but the edges of the vertebral bodies seemed here prolonged and rough, as if tending to bony union. The passages for the nerves were perfect, and the structure of the bones was natural. The spinal cord was healthy ; the pia mater was rather vascular. The vertebral artery of the left side was only half its natural size ; this defect coinciding with congenital smallness of the holes for its transmission in the vertebræ.

Circumstances did not permit the removal of more than the six lower vertebræ.

In the pericardium were three or four ounces of straw-coloured fluid. The surface of the heart was rather vascular ; and anteriorly, near the base, was an adherent patch of yellow lymph, of the size of a fourpenny piece ; when scraped off, the serous membrane did not seem altered : two other flakes of stringy lymph were floating in the fluid. The heart appeared very large, owing to great distention of its cavities by dark-coloured fluid blood. The right ventricle contained, in addition, an enormous polypus of soft, yellow fibrine, involving the coronæ columnæ. The large veins were distended in like manner. The substance of the heart was flabby, and without hypertrophy. All the valves were perfectly healthy, with the exception of those of the aorta, which presented the singular, if not unique, anomaly of being only two in number.* They lay anteriorly

* My friend, Mr. R. W. Smith, has shown me a preparation, exhibiting only two aortic valves ; but from the great degree of morbid alteration present, it may, I think, be doubted, whether such was the congenital arrangement of the parts. In the pulmonary artery two or four valves is not an unfrequent occurrence, but this is different in the case of the aorta.

and posteriorly, and, larger than usual, they were quite healthy, except at their free borders. From these projected into the aorta large, fimbriated, cauliflower-like excrescences, divided into laminae, soft exteriorly, but with osseous deposit in the interior. They must have existed for a long time, yet the only symptoms of any disease of the kind were observed shortly before death, when there was present a disagreeable rolling motion of the heart, accompanied with a bruit de soufflet. The interior of the aorta was unaltered, except by a small patch of atheromatous deposit. There were about eight ounces of brownish, opaque fluid in each pleura. The sub-pleural vessels were very turgid, more distended. The lungs were healthy. In the abdomen was a small quantity of straw-coloured serum. The liver was much beyond its natural size, and of a dark purple colour exteriorly. Cut into, it had a curious speckled appearance, caused by the acini being gorged with dark blood, between which the yellow structure retained its natural colour. A portion of it having been macerated for a few days, and the blood repeatedly expressed, it diminished in size by one-half, and regained its natural colour. The kidneys were of a natural size, but flaccid, and of a dirty leaden hue, presenting brownish spots externally, and granular surface. The capsule tore off with great ease. The cortical substance seemed increased in thickness; the tubuli were very dark coloured, and the pelves very vascular.

As to the cause of exostosis of the spine, it rests in some obscurity. In persons affected with lateral curvature it seems a provision of Nature to strengthen the vertebræ, in the same manner nearly as the interior curve of rickety bones is fortified; and in caries of the spine its most favourable termination is by ankylosis.

Exclusive of such cases, exostosis of the spine is considered to be the result, if not the necessary concomitant of old age; but the subjects of the foregoing cases were by no means old men. It seems more natural to imagine that the ankylosis of old people is analogous to that of the coccyx occurring in advanced life, and is the effect of what Portal calls the "mere

drying up of the ligaments in general, or of the ligamento-cartilaginous bodies interposed, which, in sinking, become as thin as paper, and as hard as old leather.”* This accounts for the loss of stature, as well as the obliquity of the spine, in old age; while the bones thus brought together will unite without redundancy of new osseous material. And it may be added, that it is not unlikely, that, in many instances, exostoses found in persons far advanced in age have been attributed to this latter, though really formed at an earlier period of life. This will seem more probable in the sequel. Wenzel gives two figures of a spine in this condition.† He attributes exostosis to long-continued and violent exertion, and remarks, that it is common in the hard-worked classes, such as porters, and in beasts of burden and draught. He states, that “there is congestion of the parts, and that the bone is thrown out between the external periosteum and anterior vertebral ligament; which last, when the bony laminae are prominent, is in a state of tension, thickened, and of a remarkably shining lustre, with very little trace of it remaining (fast verschwunden), where the bony growths are most prominent.” Such was the pathological condition of the parts in the case first given; and, it may be remarked, that the gentleman during the few last years of his life, used, in addition to other active exercises, to join in the game of cricket, which calls for such sudden and strenuous efforts; so that it may be fairly questioned, whether the cause above mentioned may not apply to his case.

Lobstein‡ is disposed to attribute ankylosis of the vertebræ to gouty and rheumatic disposition. He says it is most common in men in whom also rheumatism is most frequent.

In the last case the deformity closely resembled what is attributed by Delpech to rheumatism.§ He gives two examples: in

* Cours d'Anatomie Medicale, t. i. p. 297.

† Opus cit. tafel ii. fig. 2 and 3.

‡ Lobstein: Traité d'Anat. Path. t. ii. p. 337.

§ In Wenzel's work is delineated (tafel 1, fig. 1) a preparation, exhibiting union of all the cervical vertebræ and of the head, and in Sandifort's Museum Anatomicum

one (taken from "Ward on Distortions of the Spine") the patient could not raise his head sufficiently to see before him; in the other, where the trunk was fixed in the most extreme state of flexion it is possible to imagine, the head was lower than the shoulders, and the face turned towards the chest. He gives us to understand that this deformity was cured in both cases (though this does not clearly appear), after having existed for several years, and asserts, that rheumatism is never followed by organic lesion, and that "although the deformity is inconceivable, it is the easiest possible to efface." (Nous pouvons assurer qu'elle (la difformité) surpassait tout ce qu'on pourrait imaginer, nous n'aurions jamais cru, si nos yeux ne l'avait vu qu'une inflexion antérieure de l'épine pût aller jusque là.)*

He says, when one side of the oblique articulations is affected, the muscles, in order to prevent the mutual pressure of the affected surfaces, turn the head towards the pain, inclining it to the opposite side, which, according to him, diagnoses it from contraction of the sterno-mastoid muscle, but that the

(tab. xv. figs. 1, 2), what he calls, "concretio plenaria," of the same parts, and of the first dorsal vertebræ. In the latter, the head is fixed in a position inclined to the left, while the face is turned to the opposite side, so that the left ramus of the jaw lay in a line with the centre of the vertebræ. In the first case, Wenzel states that the fibro-cartilages were whole, while in Sandifort's they were destroyed, a hiatus being observable between the vertebral bodies at their centres, at each side of which hiatus is seen the "confluxus plenaria." All parts of the vertebræ were thus cemented. There was some deformity of the base of the cranium, and the atlas was small, in the first case. The condition of the second was, no doubt, the consequence of the favourable issue of destructive disease of part of the occipito-atlantal articulation.

Mr. Lawrence (Med. Chir. Trans. vol. xiii.) states, that in most instances, the left side of that articulation is affected, and the cessation of morbid action is often followed by union more or less extensive of the vertebræ beneath.

There was no curve of the neck in either case, and not the least deposit of bone on surface of the vertebræ, showing that the anterior ligaments of the neck were unaffected, and they consequently had not the same origin as the case of ankylosis of the neck I have given.

* Op. cit. t. i. p. 229.

fibrous tissue in front of the spine being eminently disposed to inflammation, if this is at all prolonged, it is communicated to it, and the anterior incurvation becomes inevitable; and, that these parts being affected, the fibro-cartilages cannot escape. He produces no dissection, to prove that organic lesion never ensues, and notwithstanding his opinion that such deformity, even after having existed several years, is “*de toutes la moins difficile à effacer*,” I think the case before us may not unnaturally be considered to have arisen from rheumatism, an idea which some, perhaps, will think strengthened by the presence of the vegetations of the aortic valves.

The comparatively small degree of suffering, compared with the two preceding cases, is easily accounted for by the different disposition of the nerves in the cervical region, together with the greater flexibility of the neck, in addition to which, the muscles in front must, in any case, protect the former from injury. The pain experienced was due to the inflammation of the parts, particularly of the oblique articulations, combined with irritation of the roots of the nerves. Dr. Croker informed me that this man had undoubted hysterical symptoms, and in the case I myself witnessed, they were also present. There was occasionally a good deal of impatience and irritability of temper and crying (not from pain), with, in general, the peculiar brightness of the eye and placidity of the countenance, so often characterizing hysterical patients.

As to the treatment of exostosis, there is little chance of any thing effectual being done, except by active means at the outset. In the first and last cases the gums were touched by mercury, during their progress, without any effect on the symptoms.

It must be a matter to rest upon the judgment of the practitioner, whether he will resort to active measures in such cases as the first detailed, where there are no symptoms to guide him but the pain which is common alike to aneurism of the aorta. Perhaps the safer practice would be, to treat the patient for the disease we are noticing, trying the effect of local depletions,

as cupping, with counter-irritation, or moxas, and giving internally mercury, so as to affect the constitution, followed up by the hydriodate of potash. Even if aneurism be present, these remedies can do little harm, and it will be time enough to stop them if they seem to aggravate the symptoms.

When the disease has advanced so far as to simulate Potts' curve, as in the later stage of the case alluded to, the means for distinction would still be desirable, as the medicines named above might, if pushed actively, be yet of some avail. For that end, if a conclusion can be drawn from a single case, perhaps the excessive nature of the pain, the tendency to sudden sinkings, and the gradual bend of the spine, which, in Potts' disease seldom exists at all when the lumbar vertebræ are affected, may be found to serve as diagnostics.

The general and very great bend, directly forwards, of the neck, will assist to recognize it in this region, when depending on rheumatism, and this, together with the non-existence of the feeling of great weight of the head, of dysphagia, fulness of the back of the pharynx, or of hoarseness of the voice, may lead us to distinguish it from displacement of the occiput on the vertebræ, arising from destructive inflammation of the bones and ligaments.

In exostosis, the curve being primarily caused by the effort to relieve the stretch on the inflamed ligaments, if inflammatory action be put an end to, nature will remedy the deformity, unless it has produced organic change in the parts or bony union. On the removal of this bone, once formed, no treatment can be expected to have any power, and we may be taught, by its presence, to be cautious in using mechanical means to rectify the deformity. They must be dangerous and cannot be of use. The inflammation might, to be sure, extend itself to the membranes of the cord or brain, in such a case as the last mentioned; but the greatest danger is to be apprehended from external violence, nature's admirable provision for resisting the shock being destroyed by the solidification of the parts.

ART. V.—*Observations on Puerperal Convulsions*. By ROBERT JOHNS, A.B., M.B., T.C.D., Licentiate of the Royal College of Surgeons in Ireland ; Vice-President of the Obstetrical Society ; and Assistant Physician to the Dublin Lying-in Hospital.

[Read before the Obstetrical Society, April 6, 1843.]

AMONG the diseases incident on the parturient state, few are fraught with more danger, or more liable to an unhappy termination, and certainly none more calculated to create alarm, and even terror, in the spectator, than puerperal convulsions. Yet, important as this affection confessedly is, it is not my intention to enter extensively into details upon it (particularly as Doctor Dwyer so recently directed the attention of the Society to it), but rather to notice some practical facts, which have not been dwelt upon with sufficient impressiveness by authors, and others that have been altogether overlooked. Perhaps most of these facts, if not all, are already known to every experienced practitioner, for it cannot be denied that the mortality in puerperal convulsions has decreased considerably in later years ; a circumstance that can only be explained by the disease being better understood, and of course its treatment improved ; but with the junior practitioner it may not be so, and to such I hope these observations may prove not only interesting, but useful, being taken from the book of Nature, the only instructress that can be implicitly relied on.

The first important fact, then, to which I would direct attention is, that this fearful affection comes not upon us without due and sufficient warning, but that there are premonitory symptoms, by a proper attention to which the convulsions may be altogether prevented. Of this fact I am, by experience, perfectly convinced, and I am, moreover, enabled to prove it satisfactorily by cases, which, through the kindness of Dr. Johnson, I have been permitted to extract from the ward book of this hospital.

It is familiarly known that during the last months of pregnancy swelling and œdema of the inferior extremities very frequently occur, and these symptoms are justly considered as a harmless complication; but if a similar affection is observed to attack the superior parts of the body, as the hands and arms, the neck and face, the case will then require a more close and accurate examination: for if in combination with this symptom there exist headach, weight, or giddiness in the head, ringing in the ears, a temporary loss of vision, severe pain in the stomach, with flushed face, there will be risk of convulsions,—a risk that will be converted into certainty, if—1. The woman is pregnant for the first time, or had similarly suffered in former pregnancies; 2. Where the head of the child presents as in ordinary labours; and 3. Where the woman is of a full and plethoric habit.

I. I am quite aware that there are some few cases on record of women having suffered from convulsions in after pregnancies for the first time; yet without impugning their correctness, they are so few that they cannot interfere with the general principle which I seek to establish,—being, in fact, but exceptions, and not the rule. And this rule, I think, can be sustained by evidence sufficient to satisfy any candid or impartial inquirer. I attach but little weight to my own experience, being as yet but limited, yet such as it is it bears directly upon the point, for I have never seen convulsions in any but first pregnancies, or in those who had previously suffered. Thus you will see—

1. By the cases taken from the ward book of this hospital, that nine women who had convulsions, and twelve who were threatened with this disease, within the last two years, were *all* pregnant for the first time, with the exception of *two*, and each of those two females had the disease in her former labour.

2. Doctor Collins, in his valuable practical treatise on Midwifery, relates thirty cases of this affection, which occurred in this Institution during his Mastership, in twenty-nine of these the female was pregnant for the first time; and the subject of

the remaining one was in labour of her second child, but she had convulsions during her first pregnancy.

3. Of nineteen cases recorded by Dr. Clarke, sixteen were first pregnancies.

4. In thirty-six of forty-eight cases enumerated by Dr. Meriman, where convulsions were present, it was the female's first pregnancy.

5. And of forty-six cases published by Dr. Robert Lee of London, thirty were first children.

6. And in none of those cases given by Drs. Clarke, Merri-man, and Lee, in which they were present, are we told, whether or not, the females, the subject of them, had the disease in their former labours.

II. Convulsions so very rarely occur when the presentation is preternatural, that when any other part except the head presents, there need be very little apprehension of their supervision. Thus in each of the twenty-one cases which I have met in the hospital, the head was the presenting part, and in short, according to my observation, it is so invariably.

In twenty-nine of the thirty cases recorded by Dr. Collins, the presentation was natural, and in the remaining one the feet presented.

In all Dr. Lee's cases the head presented; in fact the Doctor told me he never met convulsions in a preternatural labour.

Dr. Johnson has informed me he met once, and once only, a breech presentation, complicated with convulsions.

But besides the position of the child, the length of the labour seems to have a considerable influence on the production of convulsions; for a patient may have exhibited all the premonitory symptoms, and yet escape if the labour runs a very rapid course; whereas if it is protracted, she has but little chance, unless active measures have been previously adopted for their prevention. Thus it is observable, from the cases which occurred in the hospital, and also from Dr. Collins's tables, that they rarely arrive before the female has been several hours in

labour. Here are two important points, in which I have arrived at conclusions different from Velpeau, for he states, that malposition of the child is a cause of this affection, and enumerates a quick labour amongst its exciting causes.

In confirmation of these views it may be observed, that in most, if not all the cases which I state as having occurred under my own observation, these very premonitory symptoms had been present before labour, and I argue, that had they attracted the requisite attention at that period, the subsequent convulsions might have been avoided; because in the cases of other females who exhibited the same symptoms, the adoption of preventive treatment in the last month of pregnancy evidently produced the desired effect. This treatment consists (in mild cases) in the administration of purgative or laxative medicines, to the extent of regulating the bowels, and keeping them moderately open, which, in conjunction with diuretics, and the free exposure of the female to the open air, may, in such, prove sufficient; but where the case is urgent or threatening our reliance must be on general bleeding. As a general rule, this evacuation must be made with considerable freedom, but of course regulated, as in every other case, by the strength, habit, and constitution of the patient, and perhaps also by the period at which our assistance is sought. It may be moderate in proportion to the remoteness of the labour, but when that has arrived there is no time to lose, and the treatment must be active, energetic, and decisive; at this period the administration of tartar emetic, in nauseating doses, is a valuable adjunct.

Convulsions, under the present system of management, rarely prove fatal of themselves, but they frequently seem to predispose to inflammation of the peritoneum or uterus, which may appear about the second or third day after delivery, and generally runs a rapid course. Thus having escaped the convulsion, she has another danger to encounter, and the necroscopic appearances of persons that have died after the fits, explain the occurrence of death as having been caused by metritis or peritonitis. In the

two females who died in this hospital it will be shown that peritonitis set in very early, and proved fatal in a very short time, and in many that recovered a similar disease occurred, though not in an equal degree of severity. In three of the five cases recorded by Dr. Collins also there were evidences of abdominal inflammation. A knowledge of this fact may have the effect of diminishing the mortality of this fearful disease, if it leads to the adoption of a prophylactic plan of treatment, and the administration of small doses of mercury; and if this fails, and the disease occurs notwithstanding, we have then the advantage of having a certain quantity of the medicine taken by the patient, a circumstance of the greatest importance when the rapid progress of such cases is taken into account.

From these facts which I have just brought forward, I should conceive the importance of every medical man seeing his patient, and attending to her general health, during the latter months of utero-gestation, and more particularly if she were pregnant for the first time, too apparent to require any comment from me to increase it.

The late Dr. John Clarke of London, in his *Practical Essays on the Management of Pregnancy and Labour*, has given some highly valuable remarks on this subject, from which I extract the following:

“With regard to the general management of women with child, we ought always to remember, that the progress of the future labour and its consequences will depend very much upon the previous state of the patient's health. In every thing, therefore, which we recommend to pregnant women, we should consider the effects which may be thereby produced upon the labour, and upon the health of the woman afterwards.

“The natural disposition of pregnant women verges towards plethora, and those diseases which have been denominated diseases of increased action. If this plethoric disposition and increased action be kept up, or aggravated by improper or heating food, by violent exercise, or strong liquors freely and imprudently

drunk, it must be apparent that the stimulus arising merely from the exertions of labour will be sufficient, in a constitution so predisposed, to produce a fever. To guard against this, women, during pregnancy, should carefully and industriously avoid all excess of the table, and should confine their diet to such kinds of food as neither stimulate during their digestion nor afterwards. Fruits, therefore, vegetables, and milk diet, are particularly proper, with a sparing use of animal food, strong liquors, and spices. Exercise should be taken, but it should be moderate in its degree, and, if possible, should be in a pure air.

“ By paying a constant attention to these points, we shall so conduct a woman through the state of pregnancy, that she will fall into labour in perfect health, and with the constitution prepared to sustain the violence of the exertions employed during the progress of it, and this without the most remote danger of disease being produced afterwards.”

I have now only to repeat the conviction I have already expressed, that puerperal convulsions scarcely ever occur except in cases of first children, or where the presentation is natural; and the practical inference is, that the same class of symptoms which, obtaining in a female with her first pregnancy, the head of the child being the presenting part, would lead to an apprehension of an attack of convulsions, and require the most active prophylactic treatment, might be almost entirely disregarded if the patient had previously borne children without such attack, or if the presentation was preternatural. But where these premonitory symptoms give indication of threatened mischief, it is of the utmost importance to prevent the convulsions if possible, not alone on account of the danger immediately and directly attendant on them, but that they may lay the foundation for formidable disease at a later period of life, as proved by the following case :

A lady about 40 years of age, got an attack of apoplexy, in consequence of which she is paralysed on one side, and is lin-

gering out a miserable existence, her intellect being nearly destroyed. From the history of the case it appears that she had swelling of the face and upper extremities (which I have described), accompanied by headach in her first pregnancy. These symptoms were disregarded by her medical attendant, and when labour set in she had a violent attack of puerperal convulsions. From their occurrence till the intervention of the hemiplegia, she suffered occasionally from headach, which was considered by herself and friends as the consequence of the puerperal convulsions, she never having previously suffered from any of those symptoms.

One other fact remains to be noticed, in connexion with puerperal convulsions, that may be of some importance. If a female, subject to habitual epilepsy, marries, and becomes pregnant, a question may arise whether it will be likely to produce any unfavourable effect upon her pregnancy or labour. Now although epilepsy has been laid down by some as a predisposing cause of puerperal convulsions, and the two diseases seem to partake of a similar character, still, I think, it seems to operate in a different direction, as women who suffer from falling sickness appear to be less prone to its attacks during pregnancy than at any other time.

Bandelocque says, that when epilepsy is a constitutional disease its attacks may be supported during pregnancy without any manifest injury to gestation. Velpeau thinks that pregnancy seems to suspend epileptic attacks altogether. But I am not prepared to go to this extent, for females occasionally have returns of this disease during gestation, a remarkable instance of which occurred not long since in this hospital. A female was admitted into the labour ward with her face extensively burned, and not yet healed, and on inquiry it was found that the injury had been caused by her falling in the fire during an epileptic attack some days before her labour set in. She, nevertheless, went on well through her accouchement, not having had any convulsion or tendency to it whatever.

But I believe there can be no doubt that epileptic women often have a respite from the disease, or at least that its severity is mitigated during pregnancy. This observation I have heard made by Dr. Johnson in his lectures, and I have had abundant opportunity of verifying it since. In not one of the numerous cases which this hospital afforded me the opportunity of seeing, did convulsions occur either during pregnancy, labour, or immediately after ; but some of the females experienced a return of the epilepsy some days after delivery, which subsided without any treatment. One remarkable case occurred in the hospital within the last year, which ought to have terminated in convulsions, did any connexion exist between the two diseases. A female, subject to epilepsy from infancy, of diminutive stature, with an undersized pelvis, pregnant for the first time, and who had a tedious and difficult labour, nevertheless went through her confinement well, and left the hospital, never having had a single symptom of convulsions.

CASE I.—Mary Horan, æt. 26, pregnant for the first time, was admitted into the Lying-in Hospital on the 15th February, 1841. When twenty-seven hours in labour she gave birth to a living male child. As its head, the presenting part, was being expelled, she was attacked with convulsions, which yielded to venesection and tartar emetic solution. It appears that she suffered very much from headach, dimness of vision, and paralysis of right arm, during the latter months of utero-gestation. She recovered quickly, and left hospital on the eighth day after her confinement.

CASE II.—Mary Anne Dunne, æt. 21, pregnant for the first time, on the 19th April, 1841, was admitted into the Lying-in Hospital whilst in convulsions, which set in when she was sixteen hours in labour. All the children (triplets, stillborn, two boys and a girl) presented naturally, but were delivered instrumentally. The convulsions were subdued by the usual treatment, venesection, purging, and antimonial solution ; but on the second day after delivery peritonitic symptoms exhibited themselves,

and she died in thirty-six hours from their attack. The following are the appearances which presented themselves on examining the body, twelve hours after death :

The peritoneum generally inflamed, mostly so in the region of the ovaries ; some serous and lymph effusion into the cavity of the abdomen, the lymph being of a very soft consistence ; the ovaries enlarged to thrice their natural size, and infiltrated with serum to complete disorganization ; very many vascular-like bodies were scattered through them. The broad ligaments and fallopian tubes were highly vascular.

This female suffered very much during the latter months of pregnancy, from swelling and œdema of the hands, face, and feet, and occasionally severe headach.

CASE III.—Maria Galbraith, æt. 25, pregnant of her first child, a girl, which presented with the head ; was admitted into the Lying-in hospital on the 11th June, 1841. When forty hours in labour she was seized with convulsions, which yielded to venesection, purging, antimonial solution, and delivery by the crotchet. She recovered slowly, and left the hospital on the 3rd of July. She since, in her second labour, had convulsions, followed by peritonitis, of which she slowly, but eventually, recovered.

CASE IV.—Catherine Skelly, æt. 19, was admitted into the Lying-in Hospital on the 29th July, 1841, pregnant of her first child, a girl, which presented naturally, and was born alive, after a labour of five hours' duration. Immediately after delivery she was seized with convulsions, but recovered quickly, under the use of tartar emetic solution, and left hospital on the 5th of August, eight days after her confinement. During her pregnancy she suffered very much from headach, complicated with swelling and œdema of the superior extremities.

CASE V.—Sarah Maypowdre, æt. 17, was admitted into the Lying-in Hospital on the 28th of October, 1841, pregnant of her first child, a female, which presented naturally, but was still-born. When fourteen hours in labour she was seized with con-

vulsions, which ceased on venesection, purging, and antimonial solution being had recourse to. On the fourth day after delivery peritonitis set in, which yielded to treatment, and she left the hospital quite well on the 31st of the month, twelve days after delivery.

It subsequently appeared that she had suffered from severe headach and some convulsive attacks during the last month of utero-gestation. She was since delivered in the hospital of her second child, without having had any convulsion.

CASE VI.—Rosanna Capper, æt. 20, was admitted into the Lying-in Hospital on the 19th of February, 1842, pregnant for the first time. When ten hours in labour she was attacked with convulsions, and shortly after gave birth to a living female child, which presented with its head. The paroxysms abated, and finally ceased, under treatment, such as venesection, purging, and antimonial solution. On the fourth day after delivery metritis presented itself, of which she recovered, and left the hospital quite well on the 15th of March. This patient suffered very much from headach, considerable œdema of hands and face, with flushings, and fixed pain in the centre of the forehead during the latter months of her pregnancy.

CASE VII.—Eliza Lawrence, æt. 25, was brought into the Lying-in Hospital on the 18th May, 1842, during a paroxysm of convulsions, which first exhibited themselves when she had been seventeen hours in labour of her first child, a female, which presented naturally, and was still-born. The convulsions ceased under treatment by venesection, purging, and antimonial solution. On the third day after delivery she was attacked with peritonitis and metritis, of which she died on the following day. The necroscopic appearances were as follow :—A large quantity of straw-coloured serum, with lymph floating in it, was effused into the cavity of the abdomen; some lymph also adhered to the intestines, which were much paler than natural, and very much distended with gas. The uterus soft, and badly contracted; its external surface pale, and its internal coated with a

dark mucous secretion from its parietes; the substance at the cervix for about a line internally, together with the os, was very dark coloured, and in a sloughy state. The ovaries flabby, and containing a serous fluid. Corpus suteum existed in the right ovary, but with great difficulty was discovered, being nearly quite disorganized. This female suffered greatly from headach, together with swelling and œdema of the face, and of the upper and lower extremities, during the latter months of gestation.

CASE VIII.—Anne M'Fadden, æt. 22, was admitted into the Lying-in Hospital on the 7th of June, 1842, pregnant of her second child, a girl, which was born alive, after a natural labour of eight hours' duration. She was seized with convulsions eight hours and a half after delivery, which ceased under treatment, by venesection, purging, and antimonial solution. On the day after her confinement she was attacked with peritonitis, of which she recovered, and left the hospital quite well on the eighth day from her accouchement. This female had severe headaches, complicated with swelling and œdema of the superior extremities, during the latter part of this pregnancy, and suffered from this same disease with her first child. She is at present pregnant for the third time, and is adopting measures to prevent the occurrence of convulsions, having most, if not all, of their premonitory symptoms.

CASE IX.—Mary Callaghan, æt. 21, was admitted into the Lying-in Hospital on the 7th of June, 1842, being then pregnant of her first child, a boy, which presented naturally. When fifty hours in labour, she was seized with convulsions; which yielded to treatment by venesection, purging, antimonial solution, and finally delivery by the crotchet. Peritonitis set in on the third day after her accouchement, of which she recovered, and left the hospital perfectly well on the twelfth day after delivery.

This patient suffered acutely from headach, combined with swelling and œdema of the superior extremities, during the lat-

ter months of gestation. Convulsions threatened, but prevented by treatment.

CASE X.—Mary Rynd, æt. 20, pregnant of her first child, was admitted into the Lying-in Hospital on the 19th of November, 1841, suffering very much from headach, complicated with swelling and œdema of face and superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of five hours' duration, giving birth to a living male child. On the day after delivery peritonitis set in, which yielded to treatment. On the 27th of the month, eight days after her confinement, she left the hospital quite well, never having had a single paroxysm of convulsion, nor any return of the premonitory symptoms.

CASE XI.—Maria Carroll, æt. 24, pregnant of her first child, was admitted into the Lying-in Hospital on the 17th of October, 1841. When forty hours in labour some of the premonitory symptoms of convulsions, such as intense headach, complicated with swelling and œdema of the superior extremities, were present; however, soon after venesection, together with purging and antimonial solution, were had recourse to, she gave birth to a still-born female child, and left the hospital quite well on the tenth day after delivery, never having had a single convulsion, nor any return of the premonitory symptoms.

CASE XII.—Honora Reilly, æt. 30, pregnant for the first time, was admitted into the Lying-in Hospital on the 17th of December, 1841. When twenty-two hours in labour she complained very much of headach, and was extremely restless. Shortly after venesection, purging, and antimonial solution were had recourse to, she brought forth a living male child, which presented naturally, and she left the hospital quite well on the eighth day after delivery, never having had a single convulsion, nor any return of the premonitory symptoms.

CASE XIII.—Anne Smith, æt. 18, pregnant of her first child, was admitted into the Lying-in Hospital on the 23rd of December, 1841, complaining very much of headach, complicated with

swelling and œdema of the superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of four hours' duration, giving birth to a living female child. She left the hospital quite well on the eighth day after delivery, without having had any convulsion or return of the premonitory symptoms.

CASE XIV.—Mary Conway, æt. 23, pregnant of her second child, was admitted into the Lying-in Hospital on the 8th of March, 1842, having intense headach, in combination with swelling and œdema of the superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of eight hours' duration, giving birth to a living male child. She left the hospital quite well on the eighth day after her delivery, not having had any convulsion or return of the premonitory symptoms. This female had convulsions with her first child.

CASE XV.—Elizabeth Barnes, æt. 24, pregnant of her first child, was admitted into the Lying-in Hospital on the 10th of August, 1842, complaining very much of headach, combined with swelling and œdema of the superior extremities, which symptoms had existed during the latter months of pregnancy. She was bled, purged, and had antimonial solution, and passed through a natural labour of twenty-two hours' duration, giving birth to a living female child. She left the hospital on the eighth day after her confinement, not having had any convulsion or return of the premonitory symptoms.

CASE XVI.—Sarah Pepper, æt. 24, was admitted into the Lying-in Hospital on the 21st of March, 1842, suffering from intense headach, in combination with swelling and œdema of the superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of eight hours' duration, giving birth to a living female child, not having had any convulsion or return of the premonitory symptoms. Peritonitis set in on the third day after delivery, which yielded

to treatment, and she left the hospital quite well on the eighth day after her confinement.

CASE XVII.—Ellen Kelly, æt. 19, was admitted into the Lying-in Hospital on the 13th of May, 1842, complaining of severe headach, complicated with swelling and œdema of the superior extremities, paralysis of the right arm, and great pain down the shoulder. She was bled, purged, and had antimonial solution, and passed through a natural labour of eight hours' duration, giving birth to a living female child. She left the hospital quite well on the eighth day after her accouchement, not having had a single paroxysm of convulsion, nor any return of the premonitory symptoms.

CASE XVIII.—Margaret Reynolds, æt. 21, presented herself at the Lying-in Hospital, during the last month of her first pregnancy, for medical relief, in consequence of her suffering from intense headach, complicated with severe pain in the stomach and swelling, with œdema of the face and superior extremities. She was then purged, bled, and kept constantly in the open air; and on returning to the hospital on the 10th of June, 1842 (about a month after) she passed through a natural labour of twelve hours' duration, giving birth to a still-born male child, and left the institution quite well on the eighth day after delivery, never having had any convulsion or return of the premonitory symptoms.

CASE XIX.—Ellen Robinson, æt. 20, pregnant for the first time, was admitted into the Lying-in Hospital on the 8th of June, 1842, whilst suffering from severe headach, complicated with swelling and œdema of the superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of fifteen hours' duration, giving birth to a living male child. She was discharged from the hospital, quite well, on the eighth day after her accouchement, not having had any convulsions, nor a return of the premonitory symptoms.

CASE XX.—Esther Boyle, æt. 25, applied at the Lying-in Hospital, during the last month of her first pregnancy, for me-

dical relief, in consequence of her suffering from severe headach, complicated with swelling and œdema of the face and superior extremities. She was then bled, purged, and kept in the open air; and returned to the hospital at the end of the month (on the 4th of July, 1842), passed through a natural labour of six hours' duration, giving birth to a living female child, and left the institution quite well on the eighth day after delivery, not having had a single convulsion, nor any return of the premonitory symptoms.

CASE XXI.—Joan Moore, æt. 22, pregnant of her first child, was admitted into the Lying-in Hospital on the 10th of August, 1842, whilst suffering from intense headach, complicated with swelling and œdema of the superior extremities. She was bled, purged, and had antimonial solution, and passed through a natural labour of twenty-four hours' duration, giving birth to a living male child. She left the hospital quite well on the eighth day after her confinement, never having had any convulsion, or a return of the premonitory symptoms.

BIBLIOGRAPHIC NOTICES.

The Physical Diagnosis of Diseases of the Lungs. By WALTER HAYLE WALSHE, M. D., &c.

Two manuals of physical diagnosis have been recently noticed in this Journal. The present work belongs to the same class, but is differently arranged, and though adapted, as we are informed in the preface, for beginners, is by no means unworthy of the attention of the experienced stethoscopist.

The merit of the book is of a practical kind (its literary faults we shall have to notice presently), and the remarks which are the result of the author's own observation or reflection, are uniformly valuable and judicious, and prove Dr. Walshe to be a master in the art of physical diagnosis. A few instances of his manner of discussing practical questions may not be unacceptable to our readers.

On the measurement of the chest in phthisis he remarks :

“ There appears to be no point more distinctly proved by observation, although questioned by some, than that depression of the infra-clavicular, post-clavicular, and upper scapular regions attends many cases of phthisis. At what period of the disease, and by what process is this depression effected? Laennec, who first drew attention to the point, referred the depression to evacuation of the contents of cavities, and to the subsequent contraction, and so called cicatrization. Subsequently Dr. Stokes shewed that depression might set in at a much earlier period, in fact, ‘without the formation of any cavity whatever,’ and referred it to the atrophy of the pulmonary substance which attends the progress of tuberculization. More recently still M. Fournet has fixed yet earlier the possible period of development of depression, namely, before softening has occurred. In such cases he has invariably found, that the apex of the lung, besides containing tubercle in abundance, was invested with thick and dense false membrane ; and to the contraction of the plastic matter forming this membrane, he ascribes the chief influence in causing depression of the corresponding surface. From his observations it would appear, that the amount of depression was always directly as the age and

density of the plastic matter ; and these latter directly as the quantity of tubercle accumulated in the lung. He admits also, that the formation of cavities greatly increases the amount of depression. I am enabled, from my own experience, to confirm the statement of M. Fournet respecting the period at which depression *may* be visible, and likewise his notions on the importance of false membranes in producing it. Respecting the regular proportions he describes between the false membrane, the tubercle, and the change of shape, I must confess myself unable to speak, and I believe that both atrophy of the lung, and contraction of plastic matter exuded into its substance (to which no one appears to have referred) have their influence in producing the depression. Nevertheless it is true that I have not seen notable depression (exclusive of cases of cavity), unless when there was pleural false membrane in considerable quantity present.

“In a conversation upon this subject which I recently had with Dr. Chambers, I learned, that he has made the interesting observation that an *enlargement* in the antero-posterior diameter of the summit of the chest (and consequently I presume some amount of visible bulging) is discoverable in the early stage of some cases of phthisis ; *a priori* considerations argue strongly in support of the accuracy of this observation. Enlarged size of the part implicated must in fact be the *first* result of the morbid accumulations at the apex (both tuberculous and simply plastic), but it is on similar grounds fair to suppose, that the enlargement must be of very short duration—a circumstance which would plausibly explain its not having hitherto attracted attention. It seems probable (but upon this point I do not know Dr. Chamber's experience) that acute cases, and those in which emphysema co-exists, are those in which it will most commonly be detected.”

The following remarks on some opinions of Dr. Stokes first put forward in this Journal are worthy of attention :

“The state of the intercostal spaces in parts which have undergone expansion or bulging has been made a subject of interest by the observations of Dr. Stokes. He maintains, that in emphysema “even after great dilatation of the chest has occurred, we see the intercostal spaces, so far from being obliterated, *deeply marked*,” and that the single malady in which this obliteration really occurs is pleurisy in its advanced stages. The conditions directly conducive to its production are *paralysis* of the intercostal muscles and excentric pressure, one being as essential as the other : this paralysis is presumed to be the result of inflammation extending to the muscular tissue. For the same reason the intercostal spaces will not be obliterated in cases of simple hydrothorax, nor in *all* instances of pleuritic effusion, because muscular inflammation and paralysis do not exist at all in the former, and are not *necessarily* present in the latter.

“The question here started is strictly one of observation, and it must be confessed, that the experience of physicians generally does not accord with that of Dr. Stokes, in respect of the bulging in em-

physema. MM. Louis and Woillez (not to mention others who have paid less special attention to the form of the chest in emphysema), are wholly opposed to Dr. Stokes on this point. Both maintain that the intercostal hollows are in this affection either effaced or manifestly less marked than in the natural state, and even point out this implication of the muscular plane of these spaces as one of the distinctive marks of emphysematous as compared with rachitic, or physiological heteromorphism.

“Having been for some years acquainted with the difference of opinion now exposed, I have made the point a subject of inquiry, and have satisfied myself that in emphysema the conditions in respect of bulging are of three distinct kinds. *First*.—There may be no expansion at all, general or local. *Secondly*.—There may be bulging of the surface generally, with a natural state of the intercostal spaces. And *thirdly*.—There may be bulging with distinct obliteration of the intercostal spaces. The key to these apparent contradictions lies mainly in the anatomy of the disease; in its anatomical varieties which have in this point of view escaped the consideration of the observers referred to.

“In the *first case* I have found the disease, which, in respect of symptoms, may have been very intensely marked of the *atrophous* kind; here the physical cause of expansion was altogether wanting. The *second variety* of heteromorphism I have never observed in the infra-clavicular region (when alteration of shape was limited to that region, one of the special seats of such change in emphysema), but have met with it elsewhere in certain cases of almost globular expansion of the thorax in emaciated emphysematous subjects. But in these instances (and doubtless they exist more frequently than they are discovered or suspected), the local heteromorphism (when characterized in the manner now referred to), was in all probability, especially when occurring at the back, physiological, and wholly *independent of the emphysema*. *Thirdly*, when bulging has existed in regions where observation proves it to appertain specially to emphysema, e. g. the infra-clavicular, I have found the intercostal spaces distinctly obliterated, and the disease, if opportunity for post-mortem inquiry presented itself, of the *hypertrophous* kind.

“The difference of opinion, under consideration, appears to be very readily explicable in the manner now proposed. What I have stated, I believe to be in strict conformity with observation, whereas I am not aware that Dr. Stokes’s theory of inflammation of the intercostal muscles being a necessary condition of their excentric displacement, rests upon any observed cases submitted to anatomical examination. It is not easy to understand in his theory why the intercostal muscles should resist excentric pressure more powerfully than the ribs; and this, be it noted, equally in subjects of every degree of muscular weakness or vigour. It appears to me that there will always be more or less hollow in the intercostal spaces, as has been shewn by M. Woillez, so long as the elasticity or concentric force of the lung is not destroyed;

that as soon as this change has taken place, as for example, from the progress of hypertrophous emphysema, pressure sets in and influences the position of the intercostal muscles, at least, as readily as that of the ribs."

We shall only cite one more example, from his examination of the theory of the crepitant ronchus; after reviewing the different observations on the subject, of different writers, he concludes:

"It appears inferrible from what has now been said, that the theories of the mechanism of the crepitant ronchus hitherto proposed, cannot be considered satisfactory; it is unfortunately easier to make this manifest, than to substitute a less objectionable one in their room. It seems to me most probable that first the phenomenon occurs in the parenchyma of the lung itself, especially in those portions of it immediately contiguous to, and actually forming the walls of the ultimate terminations of the bronchi; whether these terminations be globular sacs open at one point of their periphery only, or otherwise constituted. Secondly, that its physical cause is the sudden and forcible expansion of that parenchyma, glued together, as it were, by the viscid exudation with which it is infiltrated. Each single crepitus, or click, would thus signify the expansion of the cell, and be produced by the unfolding of surrounding glutinous tissue necessary for that expansion. Thus conceived, as respects its mechanism, the chief phenomena of the crepitant ronchus become perfectly intelligible; its dryness and sharpness, the sensation of minute size attending the sounds of which it is composed; the similarity to the sound of minute ruptures of tissue, and the total absence of the bubbling character; its occasionally accompanying the entire inspiratory act, and sometimes appearing only at its close, according as the infiltration of viscid lymph more or less completely prevents expansion of the vesicles. We can on this supposition also, readily understand why crepitation should exist in inspiration only; though the rapid and abrupt unfolding of the glutinous mass be productive of crackling noise, it is very unlikely that the comparatively slow and equable restoration of the tissue to its previous collapsed state, would be thus productive; indeed the presumed physical cause of crepitus has ceased to exist. On the other hand, there is no reason why, in the ordinary theory, crepitation should not as regularly exist though not with the same *loudness* in expiration as in inspiration. The air is presumed, in inspiration, to have passed through a certain fluid; if so, it must re-pass through it during expiration, and assuredly, with a noise similar in kind, though less in degree. When ronchi are manifestly produced by the passage of air through liquid (e. g. mucous cavernous, &c.), they attend both inspiration and expiration."

For some further considerations confirmative of the views here taken, the reader may refer to § 97, and § 237.

The observations at § 237 is as follows:

“I have recently observed the following facts which appear to me worthy of notice, in respect of the subcrepitant ronchus more particularly, but also of the mechanism of ronchi generally. In a subject presenting the most evident signs, both in front and behind, of a cavity at the left apex, an extremely abundant subcrepitant ronchus, occurring almost in puffs and having the liquid character in a most marked manner, was day after day (during the week previous to death), detected in the entire height of the left side posteriorly. The ronchus was, however, distinctly more abundant and more liquid (as noted in writing during life), in the upper scapular, and upper part of the lower scapular regions, than elsewhere. As the patient was anasarcaous to a high degree (the urine albuminous), and as he constantly lay upon the left side, the explanation of the subcrepitant ronchus naturally suggesting itself was that it depended on œdema of the pulmonary tissue generally, but most marked at the apex, and there of course, affecting the tissue between the cavity and the surface of the lung. At the post-mortem examination, however, I found this explanation inadmissible, for the thin lamella of tissue between the cavity and the surface, was as hard as cartilage, and contained not a particle of serosity, nor was the organ in any part distinctly infiltrated with fluid, being, on the contrary, particularly dry from the excessive induration. But all along the posterior surface of the pulmonary pleura, there appeared (in addition to ordinary dense pseudo-membrane), a quantity of fine adventitious cellular tissue, abundantly infiltrated with liquid; masses of some size were formed from place to place by the accumulation of fluid in the meshes of this cellular tissue, and it was observed by those present, (who had not seen the patient during life), that they were much larger, than elsewhere, at the apex; there was no air either in the cavity of the pleura, or intermixed with the serosity. Now, although it is possible to suggest another explanation, it seems most reasonable to suppose, under the circumstances, that the ronchus was actually produced in the masses of infiltrated tissue referred to, and, therefore, outside the lung and independently of air. If such were the fact, it would lend much indirect support to the theory already advanced in explanation of the true crepitant ronchus.”

We think that such a theory is moreover strengthened by the cases in which the crepitant ronchus is modified, or prevented by extreme congestion; cases of pneumonia, as is well known, occur not unfrequently in which this sign becomes developed at once on the removal of this congestion by bleeding. It also accords with the phenomena observed in phthisis, many of which (as the crumpling or click sound present in most cases in the early stages of tubercle and the interrupted respiration of the same period) have their origin in all probability in deviations from the natural mode of expansion of the lung.

We have now quoted sufficiently to enable our readers to form their own opinion of the practical value of this work; we are dis-

posed to rate it very highly, and we think that we have met with no clearer, sounder, or safer exposition of the physical signs of pulmonary disease. But we just now *hinted* at a fault, upon which we must take leave to remonstrate with the author, as it arises out of a reference to a paper published in this Journal. That Dr. Walshe never read the paper referred to is evident, since he has completely misrepresented its meaning, and assigned (erroneously) to others the prior claim to the views contained in it, as we shall now very shortly shew. Dr. Walshe, page 178, says :

“ It is conceivable that if the pulmonary tissue between the larger tubes and the anterior wall of the chest be consolidated, the sound of percussion will, in that situation, have the tubular character. Such is the case, as Dr. Williams was also the first to point out in certain cases of pneumonia. There can be little doubt, I may remark here, that the cases described by Drs. Hudson, Graves, and Stokes, as examples of pneumo-thorax complicating pneumonia, admit of an easy explanation by Dr. Williams's observation. The sign most dwelt upon by these physicians was a remarkable resonance on percussion ; but, as we have just seen, this may be otherwise and very simply accounted for. Besides, the evidence of pneumo-thorax is in other respects extremely defective (some of the cases of Dr. Hudson were rejected by Dr. Stokes), and there is strong motive for believing, that the frequency of simple pneumo-thorax has been much exaggerated,” &c.

Of the literary merits of the above passage an opinion may be formed, by simply reading the following extracts from Dr. Hudson's papers in vol. vii. and vol. xi. of this Journal, and from Dr. Williams's published lectures.

At page 401 of vol. vii. Dr. Hudson says :

“ I shall next advert to the remarkable phenomenon presented by Cases II. and VII. of *tympanitic clearness on percussion over a solidified lung, without air being present in the pleura*. In the 12th and 16th Numbers of the Dublin Journal, Dr. Graves has described two cases of pneumonia, accompanied with morbid clearness on percussion, which he explains by secretion of air from the inflamed pleura, and I observe that the learned Editor of the Medico-Chirurgical Review not only concurs in this explanation, but gives a case precisely similar to the one last related by Dr. Graves, adding, that ‘ dissection has not yet confirmed conjecture in any of these instances.’ Having met with four cases in which the observation of this phenomenon was followed by dissection, I shall briefly relate them. . . . It seems to me very obvious, that these cases cannot be brought under the explanation given by the high authorities just quoted, and I confess myself quite unable to give one which would be considered more satisfactory. The existence itself of the phenomenon under the above circumstances will, I am sure, be questioned. . . . In some instances it has been accounted for by the transmission of the sound of the

stomach through the solid lung. I think this explanation will apply to three of my cases which occurred on the *left side*; the fourth will demand a different one, and it might, perhaps, be found in the facility with which *the vibrations of the air in the bronchus and its larger divisions might be supposed to be communicated through a lung in that condition, i. e. solid throughout, and, therefore, not permitting the loss in a mixed medium of solid and healthy lung of such vibration.* This is a mere conjecture which may be readily denied, and not easily confirmed; *but of the fact I am certain, that a sound, equal at times, in clearness, to that of pneumo-thorax, may be yielded by (or rather through) a solid lung under certain conditions."*

What these conditions are, further observation enabled Dr. Hudson to announce in the eleventh volume of this Journal; after detailing a conclusive case, in which the phenomenon had been detected on the *right side* during life, and a solidified lung and adherent pleuræ found after death, he proceeds to state:

"I regard it (the phenomenon of tympanitic clearness) as the necessary result of three conditions.

"1st. Elasticity and tension of the parietes.

"2nd. A homogeneous solid state of the lung.

"3rd. Air in the larger bronchial tubes.

"The importance of the first condition may be illustrated by a drum-head. That of the second is equally apparent; and the two are necessarily associated in some cases of pneumonia, occupying the lung in its *entire circumference*; for till then the tumefaction of the inflamed portion may take place at the expense of the uninflamed part; but when all becomes engaged it must be *outwards*, and a state of tension of the parietes is the consequence."

So far from any writer claiming a priority of observation of this phenomenon, after the publication of Dr. Hudson's first paper, his apprehension that its existence would be questioned was fully realized, since not only did Dr. Stokes repudiate the doctrine, and as Dr. Walshe expresses it, reject the cases, that is to say, all acquaintance with them, but different writers intimated that they considered the thing impossible and incredible. The first notice of it by Dr. Williams, with which we are acquainted, was in his lectures, published in the Medical Gazette, 1837, 8, as follows:

"Dr. Hudson, of Dublin, has also recently described cases in which a loud tympanitic sound on percussion, was presented in the upper part of the chest of a patient affected with pneumonia. Now you will understand how this sound is produced if you listen to this tracheal sound which I get by filliping on my windpipe above the sternum. The windpipe also lies under the sternum, and it divides into the two great bronchi which spread between one and two inches below the clavicles. Here, however, the porous lung lies over these

tubes, and intercepts their resonance on percussion; but let this portion of the lung be *perfectly* condensed by a liquid effusion, or perfectly consolidated by hepatization, and you will then get the bottle note of the tubes just as you do of the windpipe when no lung intervenes. The reason why this phenomenon does not occur more frequently is, that it does not often happen that the compression or solidification of the upper lobe is *complete enough*, but since my attention has been drawn to it, I have met with several cases of both pleurisy and pneumonia, in which it existed in a smaller degree.”—*Lectures, London Medical Gazette*, March 31, 1838.

We now dismiss the subject. It is perhaps not worth Dr. Walshe's while to *read* the contributions to this Journal; let him not *refer* to them, and when he again writes books of reference, let him not follow the example of such persons as the one described by a writer in the last Number of the Quarterly Review:—“On speaking some little time ago to one of the principal ‘getters up’ in the biblio-facturing line about the necessity of providing books for an educational work which he contemplated, his answer was given as nearly as possible in these words:—‘Books, books, Sir! they ain't wanted at all. That is not the way in which these things are done. All those kind of things, Sir, are done at the British Museum. I have a capital fellow, Sir, for that kind of thing—young—full of the fire of genius—capital short-hand writer. Sir, he'll get you a whole row of quartos in a week, and get all the stuff out of them as clean as a penny!’ And it is by this compendious process of gutting and ‘getting the stuff out of them,’ that nine-tenths of the *stuff* appearing in the shape of works of reference, education, and general information and literature with which we are deluged, are supplied.”

A Practical Treatise on Diseases peculiar to Women.—Part II.
Organic Diseases. BY SAMUEL ASHWELL, M. D., &c. &c.

IN a former Number of this Journal, we noticed the first part of Dr. Ashwell's work, and the opinion we then gave of its practical usefulness is fully borne out by this second part, in which we find treated, hysteria, irritable uterus, tumours of the uterus, organic diseases of the os and cervix uteri, congestion of the uterus, acute metritis, chronic metritis, cancer of the uterus, simple ulceration of the cervix and os uteri, corroding ulcer of the uterus, cauliflower excrescence of the uterus, occlusion and rigidity of the cervix uteri, organic diseases of the mucous membrane of the cavity of the uterus, and polypus of the uterus.

The chapters on hysteria, and irritable uterus contain a very good summary of what is known on these subjects, and in the general remarks on the history, symptoms, diagnosis, pathology, and prognosis of uterine disease, the reader will find very valuable information.

Dr. Ashwell divides tumours of the uterus into two classes:

“1st. Tumours, whatever be their size or induration, growing externally, and by projecting the peritoneal coat of the uterus, obtaining from it an external covering. 2. Tumours often, though not constantly, of moderate induration and bulk, which by growing internally, carry before them and are thus invested by the mucous membrane lining the uterine cavity, and hence obtain the name of submucous tumours. It need scarcely be remarked that they are accompanied by an entirely different class of symptoms.”—p. 286.

So far as symptomatology is concerned, this is a good practical distinction, but, considering the different structures of these tumours, one would wish for a more accurate pathological distinction. This, however, Dr. Ashwell does not give, owing probably to his belief that these fibrous or fleshy tumours, as well as others of a harder texture, are of cancerous origin, or in his own language :

“When their pathology is examined, satisfactory reasons may, I think, be adduced to show, that by whatever name they are designated, they ought to be regarded as malignant, although occupying the lowest place amongst adventitious heterologous formations.”

These “satisfactory reasons” are

“1. They possess the structure of compound adventitious cysts, the basis of this class of heterologous formations. 2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue, they are identical with scirrhus. 3. In hardness, occasionally justifying the application to them of the term stone cancers; they are not to be distinguished from the varieties of carcinoma already mentioned. 4. They occur very frequently in conjunction with growths of undoubted malignancy in other parts of the uterus. 5. And lastly, they possess one especial attribute of malignancy, incurability.—p. 289.

Here, however, we must join issue with the Doctor. To us these reasons appear by no means “conclusive.” After examining many specimens of fibrous and fleshy tumours and carcinoma, we have thought that we perceived a considerable difference, if not in the “arrangement of the membranous septa,” yet certainly in the “contained mass.” Their equal hardness being admitted does not, we conceive, prove their identity, for calcareous tumours are equally hard, and yet distinct from carcinoma. Their coincidence with “growths

of undoubted malignancy in other parts of the uterus" no more proves their identity than the contemporaneous existence of tubercle and cartilaginous tumour proves them to be the same. The fifth reason would equally prove the identity of any two fatal diseases. On the other hand, fibrous tumours are very rarely indeed attacked by ulceration, carcinoma always, unless the patient be cut off by other disease: fibrous tumours give rise to hæmorrhage very frequently, carcinoma very rarely, if ever: carcinoma generally spreads to the pelvic glands more or less, fixing the uterus in the pelvis even before ulceration sets in. These, and other facts in the pathology and history of these tumours, lead us to the conclusion, that they are distinct from carcinoma, and do not exhibit malignancy of character.

We are indebted to Dr. Ashwell for the information he has given us, as to the effects of iodine upon these tumours. He remarks:

"I have used iodine in diseases of the body, the mouth, and the neck of the womb, and the different success has been precisely what might have been expected. In the walls of the uterus which are not glandular, it has generally restrained the activity of the disease, confining its bulk within the limits it had attained prior to its exhibition; and after watching some of these cases for several years, there has been no increase of the affection. The inferences I have drawn from the use of this medicine are as follows: 1st. Its internal administration and its use by injection is decidedly beneficial; the advantage, if the remedy be judiciously employed, being rarely attended by constitutional injury. 2ndly. In hard tumours of the walls or cavity of the uterus, resolution or disappearance is rarely to be expected; since the growths are adventitious or parasitic, and are not imbedded in glandular structure. Hence, the prevention of further deposit—in other words, the restraint of the lesion within its present limits, and the improvement of the general health, will be the extent of the benefit derived.—p. 293.

The chapter on the induction of premature labour is very good, and we recommend it to the serious consideration of our readers. We have no doubt ourselves that in many cases we may thereby afford the patient a chance of recovery, which otherwise she has not. But as Dr. Ashwell remarks:

"To establish its propriety, it is necessary to prove two or three positions, amongst which I may especially mention the following:—1. That when death occurs, after a labour so complicated, the result is only slightly, if at all, referrible to the uterus, which rarely sustains any serious mischief, but is mainly produced by inflammation, softening and unhealthy suppuration in the growth itself; these pathological changes leading, in some instances, to rapid sinking; while in others, the powers of the system having been less impaired, death

ensues in a few days, from the constitutional collapse, induced by the protraction and difficulty of parturition, and by the extensive injury done to the tumour and other soft parts. And 2ndly, That premature parturition, artificially induced, rarely occasions constitutional mischief, is easily accomplished, and affords the best, and in many instances, the only, chance of a safe result to the mother.”—p. 323.

Although we do not agree with Dr. Ashwell in the identity of fibrous tumours of the uterus, and carcinoma, and although we are more than doubtful of the curability of true carcinoma, yet we certainly agree with the following extract :

“ I would caution practitioners against the too common error of at once determining an ulceration of the cervix to be malignant, because it may co-exist with doubtful hæmorrhages, induration, and other suspicious symptoms. I know this is controversial ground, and with those who have long regarded every protracted hardness of this part as sure to result in cancer, it will be difficult to produce a contrary impression. With truth I can affirm that such an opinion may in some, if not in many instances be abandoned, and a more favourable one entertained.”—p. 406.

The chapter on carcimona and cancer has been carefully written, and contains valuable information drawn from hospital records and the author's own experience.

In the chapter on simple ulceration, Dr. Ashwell classes the ulcers, as seen with the speculum, as follows :

“ 1. Sometimes they are mere erosions of the mucous surface, redder than the sound membrane around, and the edges sharp and well defined. Such are not unfrequently seen after acrimonious leucorrhœa, the consequence of high living and excess in sexual indulgence. 2. The ulcers of the cervix are occasionally numerous, varying in size from a small pea to a sixpence or a shilling, the larger ones being evidently formed by a coalition of the smaller, and long neglect may have induced roughness of surface and greater depth, and the colour may be a darker red. In such sores there is commonly pain on pressure, and the speculum causes bleeding. The discharge too may be sanguineous, and of a yellow or dirty white colour, but usually when there is no want of cleanliness, without fœtor. 3. There is an ulceration following protracted local irritation, from pessaries, sponge, and contrivances to prevent conception, in which the cervix is enlarged and spongy, with increased heat, and great tenderness on pressure, and an open state of the os. In such cases bleeding frequently occurs.”—p. 428.

These ulcers, it is evident, are sufficiently distinct from malignant ulcer ; thus

“ There is none of the induration produced by malignant deposit, no immobility, no fœtor and pain at all like what we discover in

cancer. Its more stationary character and limited extent, the absence of large hæmorrhages, the comparatively trivial constitutional effects, and the nearly inodorous discharge, sufficiently prove that it is not *corroding ulcer*; nor in most cases will it be difficult to determine whether there be a syphilitic taint about the affection.”—p. 429.

The treatment Dr. Ashwell recommends, is local and in some cases general bleeding, baths, mild aperients, and astringent injections, as most successful, with cautery of the diseased surface, if necessary. Of all the caustics which have been proposed, Dr. A. prefers the nitrate of silver. In the majority of cases perhaps it will be sufficient, but we have derived great advantage, even in simple ulceration, from the nitric and nitromuriatic acids.

The chapter on corroding ulcer is rather meagre, owing no doubt to the limited number of cases which have presented themselves. Dr. Ashwell states, that in twenty years he has seen but two cases, and that

“Out of 500 recorded cases of female sexual maladies in the wards of Guy’s Hospital appropriated to female diseases, I do not find one of this affection.”

A far greater number certainly present themselves in this city. As to the diagnosis, Dr. Ashwell observes, that “the finger and speculum make the diagnosis easy.” No doubt the depth and extent of the ulceration, with the perfect mobility of the uterus, so different from the ordinary cases of cancer, at once reveal the nature of the disease; but when the cancerous deposition follows instead of preceding the ulceration, the diagnosis requires great caution and care.

Further we would wish to enter our *caveat* against the free use of the speculum in these cases: the tissues are so much thinned, and so fragile, that unless the greatest caution be employed, we may lacerate the uterus.

The hint thrown out by Dr. Ashwell of the possibility of cure by cauterization at an early period, is, we think, justifiable on grounds of experience.

With regard to another malignant disease of the cervix, cauliflower excrescence, Dr. Ashwell’s experience amply confirms the description given by Dr. Gooch. As to the information afforded by an examination with the speculum, he remarks:

“I have several times seen the tumour through the speculum, and its colour has never been exactly similar. If the examination be made soon after a profuse hæmorrhage, it will not be of a bright red, but of a pale flesh colour; if, on the contrary, it be seen early,

before the waters and sanguineous discharge have drained away the richer and colouring matters of the blood, it will have a pink hue.”—p. 438.

The prognosis, according to all authorities, is very unfavourable.

“As to ultimate recovery, there is only the very slightest chance. I have never seen such an instance. But how long life may be protracted, will depend on original strength of constitution, and on the determination and means of the individual strictly to follow out the prescribed treatment. If the disease be early ascertained, and it arise from a part only of the os uteri, instead of its whole circle; if by sexual abstinence, astringent injections, regulated diet, and good air, the watery discharge and the bleedings can be controlled; then several years—four, five, or six—may be added to life. But such steady attention to prescribed rules is seldom secured; and it does not often happen, after removal, that more than a year or two elapse before the tumour grows again. The second operation takes place under less favourable circumstances than the first, there having been in the interval considerable draining and consequent exhaustion, and it is by no means rare for fever and general debility of system to set in, and the sufferer soon sinks. In two of my own cases there were nearly four years between the beginning of the malady, and death.”—p. 460.

We have known an instance of cure from excision by ligature, and the free application of nitric acid to the place from which the tumour grew. As to the foolish objections which have been raised against attempting a radical cure, we quite agree with Dr. Ashwell, that “such considerations ought to have no weight,” that “without decided treatment life cannot be long preserved, and there are many examples now on record, proving that several years, and with comfort and modified enjoyment, may by such means be secured.”

We have thus cursorily noticed a few points in some of the chapters of Dr. Ashwell's excellent volume, but we have been restrained by our limits from entering as fully into the subject as we could have wished. The remaining chapters on rigidity and occlusion of the os uteri, and on polypus, contain most valuable information, and in the well-drawn up cases scattered through the volume, the reader will see the illustration and confirmation of the doctrines laid down in the different chapters. In one or two points we have ventured to differ from the author, but we do it with the greatest respect for his talent and practical information, and we beg to assure him that his work has our best wishes for the success it so eminently deserves.

Medical History of the Expedition to the Niger, during the Years 1841-2, comprising an Account of the Fever which led to its abrupt Termination. By JAMES ORMISTON M'WILLIAM, M. D., Surgeon of H. M. S. Albert, and Senior Medical Officer of the Expedition. London: 1843.

WITH the Niger and the shores of Western Africa our associations are of a melancholy description, and the fate of the late expedition, the medical history of which is described by Dr. M'William, has done little to remove the impression, that the country which has already proved the grave of Parke, Clapperton, the Landers, and other noble and enterprising travellers, is unadapted in its present condition to maintain the existence of certain portions of the human race.

"The extinction of the slave trade," commences our author, "was the grand object contemplated by her Majesty's government in sending out an expedition to the Niger. It was hoped, that by obtaining more accurate information as to the moral and physical condition of the countries bordering on this great river, commercial relations might be established with the native chiefs, and the efforts of Europe generally would be better directed to strike at the root of the internal as well as the external slave traffic, and to the means for the extension of Christianity throughout Africa."

In order to promote these benevolent objects, three small iron steam vessels, the Albert, Soudan, and Wilberforce, adapted for river navigation, were built expressly, placed under the command of experienced officers well acquainted with the coast of Africa, manned chiefly with blacks, or persons already inured to the climate, and furnished with every necessary that science and humanity could suggest, to render the expedition prosperous or ensure the health of those daring spirits engaged in it. Among the latter objects may be mentioned that of ventilating the ships according to the principle of Dr. Reid:

"By means of which a constant supply of fresh air could be kept up between decks, or the external atmosphere, by being passed through a large iron chamber on the upper deck, might be submitted to the action of chemical and other purifying agents previous to its diffusion below."

And, as Irishmen, we may be permitted to express the pride we felt, when paying our last visit to one of these vessels, in company with several members of the Royal Society in 1840, to hear the commander, in his parting address, state that the vessels were navigated by means of apparatus arranged and provided by our distinguished countryman Professor Lloyd, in the

Magnetic Observatory of Dublin, by which the increased influence of an iron vessel upon the magnetic needle was counteracted. Great was the interest excited in London, and indeed in all parts of the empire, and among all classes—scientific and commercial, as well as the lovers of slavery-extinction, for the success of this expedition, certainly the most promising that ever left England for a similar purpose; yet some few sages, and those already well acquainted with the terrors of an African climate, shook their heads, and were silent. This is not the place in which to discuss the probable causes of the failure of the expedition, nor the probable success of any future ones; the work we quote from is the medical not the general history of the expedition, which, to say the least of it, was most disastrous.

The vessels arrived at Sierra Leone in June, 1840, and there completed their crews with picked men from the native populations, principally Kroomen. Dr. M'William describes a tornado, and its consequences, which occurred while laying off this portion of the coast, with the truth of which we ourselves have been often impressed on other parts of the African shores.

“A few minutes before eight, P. M., a black ring encircled the horizon, and the whole arch of heaven seemed enveloped in gloom. A few drops of rain fell, vivid flashes of forked lightning followed, the thunder pealed over our heads, the wind blew with violence, and the rain then poured in torrents. What made most impression on me during this fearful war of the elements, was the fearful transition from pitchy darkness to broad glaring light. At one moment nothing in nature was visible, and in another the whole atmosphere would be suddenly illumined by lightning, so as to make objects in the streets ashore distinctly perceptible. The Commissariat House was damaged in three places. Solid masses of wood, that formed the angular supports of the building, were shattered, one of them throughout a length of six feet, the boards that had been nailed to it were torn and destroyed. The attracting points seemed to have been the iron fastenings of the water spouts, which descend from the roof at each corner of the building. In the small village behind the barrack hill an Akou man and his wife were killed. During the tornado they had been engaged in worshipping the thunder, with the usual accompaniment of beating ‘tom toms,’ hallooing, and other noises; the hut was struck with lightning, burnt, and with it the votaries of the fearful element. Accompanied with Dr. Stranger I visited the place next day, and the sight that presented itself was at once humiliating and appalling. The track of the lightning was apparent across the little inclosure surrounding the hut. The hut was levelled with the ground. Near it lay the dismal remnants of mortality, partly reduced to cinder. All the muscular substance, which had been reduced by fire, was dry, shrivelled fibre. The viscera protruded, were covered with flies, and

in the last stage of decomposition. The bones of the head were white, as if they had been bleached for years, those of the legs were partly calcined."

This is an effect of lightning never seen in those who have been killed by it in this country.

Like most African nations, the different tribes on this part of the coast are distinguished, independent of all physical formation, by their mode of tattooing; but the Kroomen, the most civilized race, point out a peculiar

"Swelling on the inside of the outer ankle, as a true 'Fishman mark.' This assumed mark of distinction is not invariably present, but I have certainly observed it in a great number of Fishmen. It consists of a protrusion of the tendons of the extensor muscle of the toes, through a rupture of the sheath, which is induced by the continued strain exerted upon it from the attitude of the Fishman in his canoe, when he rests nearly altogether on the upper part of the foot, bent under the ancle.

"The Kroomen and Fishmen, according to their means, have an indefinite number of wives: both of them worship the devil. 'God,' they say, 'does nothing but good: he can do no evil. The devil can do evil only, and is therefore to be feared.' On this account they propitiate the devil by votive offerings of various kinds. Such is also the worship of the Sherbre, and several other tribes on the west coast."

This, as a friend lately said to us, is at least conciliation with a vengeance.

The expedition had now entered the river, and proceeded as far as Iddah.

"Up to this time the expedition had been fortunate beyond all expectation. The Delta had been passed, and we were entering the valley of the Niger under circumstances seemingly the most auspicious. The crews were in the best possible condition, and with a general buoyancy of feeling looked forward to the period when the vessels were to ascend the river, while they contemplated with delight the novel and diversified scenery of the high land before them. With such prospects so favourable beyond all anticipation, it is not to be wondered if we indulged a rather sanguine hope that a continuance of health would be granted to us, and that we should, under Providence, thus be enabled to persevere in the great object of our mission. But it was otherwise ordained.

"September 4th. Fever of a most malignant character broke out in the Albert, and almost simultaneously in the other vessels, and abated not until the whole expedition was completely paralyzed."

With this fever, its character, causes, and treatment, &c., we have now particularly to do, and, therefore, while we can most conscientiously recommend the book to our readers, we

quote the following passages as affording a brief *resumé* of its contents :

“ *Precursory Symptoms and Mode of Invasion.*—There was little uniformity in the character of the premonitory symptoms, or in the mode of attack. A number of the patients were for twenty-four hours, and sometimes more, sensible of headach, often slight ; and some experienced painful scintillations along the spine, attended with a feeling of coldness, before they considered it necessary to apply for medical assistance ; while in others the approach of the disease was announced by a sensation of weakness, and sometimes of burning heat in the epigastrium, giddiness, lassitude, tremulous and foul tongue, with small quick pulse, and general oppression succeeded. The eyes looked heavy, were occasionally suffused, and the motions of the pupil were performed languidly. On two occasions that came under my notice, the individuals were seized without any warning symptom, and were at once so overwhelmed as to be for a time deprived of motion and sensation.

“ In general, however, some of the abovementioned symptoms, varying in duration and intensity, preceded the accession.

“ *Character, Course, and Duration of the Symptoms.*—The accession was seldom accompanied by very marked shivering, yet previous to the period of vascular excitement, the patient usually experienced a sensation of coldness, and for the sake of warmth would fain have exposed himself to the rays of the sun. He would shortly express a wish to lie down, and would complain somewhat suddenly of increase of headach or giddiness, and intense heat of the skin, which had a dry parched feel, restlessness, intolerable nausea, and difficult breathing. The dyspnœa in several instances, particularly in my own case, was extremely distressing, and continued from one to four hours, until relieved by spontaneous vomiting, or the occurrence of diaphoresis. Headach was with some the most prominent symptom during the hot stage, and the feeling was described as that of a cord being tightly girded round the temples. The thirst was very urgent ; the tongue was foul in the centre, moist, clean or reddish, and invariably marked by indentations on the edges. The countenance was more or less flushed, the eyes occasionally suffused and always looking wild. Pulse rapid but small, frequently feeble ; thirst urgent, bowels constipated, and urine passed often and in small quantity. There was in general tenderness of the epigastrium, sometimes acute, but often not discoverable unless upon pressure.

“ In some cases, coldness of the stomach was complained of some days before death. A subsidence of febrile action in general followed in from three to six hours, or, at all events, the symptoms, if continued beyond the latter period, became much mitigated. Diaphoresis came on, the thirst moderated, and the signs of oppression in a great measure disappeared. The principal complaint at this period was from *the disagreeable odour of the perspiration, particularly in those cases that subsequently proved fatal.* I was not sensible of this

peculiarity in the smell of the perspiration in my own case, but I perceived it very distinctly in several others. The sweating continued until from eight to twelve hours had been occupied by the whole paroxysm. The patient, although considerably exhausted, expressed himself as free from all trouble, and the countenance also indicated improvement. This seemingly favourable change did not last long, for the accession generally returned in from six to ten or twelve hours. Occasionally the respite extended to twenty-four hours. In a few cases, there was a treacherous interval of forty-eight hours, in the early period of the disease; but these invariably assumed afterwards a low malignant type. The fever in them seemed to have rested only to give strength for a fresh accession.

"The accessions did not seem to observe any law of periodicity. They came on, disappeared, and returned at all hours of the day and night. The evening, however, was a more common time of accession than any other; in which case, after the cold sensation had passed off, the paroxysm generally ran through its stages in the course of the night, and had suffered a considerable remission by the hour of breakfast (eight) the next morning.

"In a few instances the remissions were as complete as in the interval of ague. These were, however, only exceptions to the general rule, for total absence of fever was indeed of rare occurrence during the course of the disease.

"I cannot say that the influence of critical days was at all apparent, further than if no material improvement was evident by the eighth or ninth day, the prognosis was then most gloomy. The patient became weak, irritable, and exhausted, and extremely restless. The remissions were most indistinctly marked; the skin was dry and constricted, the tongue parched, pulse small and irregular; the fever, in short, now assumed a low asthenic form. Occasional symptoms of mental aberration would appear at this period; the countenance pale and shrunk; but not unfrequently the patient would talk most rationally upon the state of his mind, so far as regarded his eternal happiness. In several cases this stage was wonderfully protracted, as in Case XII.

"Local pain was seldom much complained of: indeed, with the exception of headach (often very slight) at the commencement of the paroxysm, there were several instances in which the patients expressed themselves as quite well throughout the disease, although this ultimately proved fatal.

"When the disease was about to take a favourable turn, the remissions became distinctly marked, and the intervals were lengthened. The countenance (the best criterion) assumed a natural expression, a certain look of convalescence, that one can only become acquainted with by experience and contrasting it with that indicative of a fatal termination. The skin became moist, the thirst diminished, the pulse was more voluminous and softer; the tongue gradually lost its tremulousness, and could be more easily thrust out of the mouth; it

often continued a long time loaded, but the crust was less brown, and more moist, and seemed to have lost its firm attachment to the organ : at this period diarrhoea was by no means uncommon, and also a copious flow of urine, which latter was a very favourable symptom. A strong desire for food was expressed by most of the patients who had advanced thus far, and I had more than once cause to regret having gratified it.

“ Such were the general characteristics of the fever as it occurred in the Niger ; but the description is not to be regarded as applicable to all the cases, for, on board the *Albert* alone, there were several in which there was neither complaint nor evidence of suffering of any kind. These was a disinclination to be spoken to, or to be in any way disturbed ; and a listless expression of countenance, with a clammy skin, and small pulse. The periods of exacerbation were so feebly marked as to be scarcely perceptible: food and medicine were taken when offered, but seldom or ever was anything asked for, and the invariable answer to inquiries after their health was, ‘ I am very well.’ Constant watchfulness was the only appreciable symptom in these cases, which all terminated fatally, seemingly from mere exhaustion. It would have been interesting to have ascertained the nature and amount of the organic lesions in these cases ; but unfortunately, circumstances did not permit any of the bodies being examined.

“ *Contingent Symptoms.*—Of the contingent symptoms the most prominent were delirium, yellowness of skin, and convulsions, affecting various parts of the body.

“ *Delirium* was a very bad symptom in the fever of the Niger : of twenty-one cases in which it occurred fourteen died, of whom one was drowned by eluding his nurse, and jumping into the river. It was not uncommon for patients, whether affected with delirium or not, to be haunted by dreams of a frightful nature, as of being drowned, stabbed, or falling from a precipice. In the worst cases the mental aberrations were expressive of some personal misfortune, or unheard-of disease. The imposition of the slightest restraint was always a heavy grievance. In one case the patient constantly harped upon his being condemned to everlasting punishment ; when reason for awhile resumed her authority he would express shame and contrition for previous misconduct. The most solemn promises to behave well, if left at liberty, were not unfrequently made, only to be broken, whenever an opportunity offered for the exercise of the cunning, so characteristic of this stage of the disease.

“ *Petechiæ or Sudamina* were not observed in any case. In two cases which proved fatal on the seventh day, livid blotches appeared on the feet and hands, and gradually extended to the chest and abdomen.

“ *Yellowness of the Skin* occurred in nineteen cases, thirteen of which were fatal, and the average day of the appearance of this symptom was the ninth. The yellow colour was first seen in the con-

junctiva, and afterwards extended over the face, arms, and the rest of the body. It was in general light, and did not appear after death in any case in which it had not existed during life.

“The fæces in these cases were generally of a bilious colour; the urine deposited a sediment, but its chemical qualities were not ascertained.

“*Convulsions*.—In three of the fatal cases on board the *Albert*, the muscles of the pharynx and larynx were convulsively affected, preventing or much impeding deglutition. In two others, also fatal, the spasms were confined to the muscles of the abdomen and limbs. Mr. Loney, the assistant-surgeon of the *Dolphin*, the vessel that received the sick from the Soudan, at the mouth of the river, informed me that out of eight deaths, which took place during the passage to Ascension, there were two cases in which deglutition was at first difficult, and soon stopped altogether, and two others in which there were general convulsions, more especially of the extremities.

“In one case paralysis of both arms, from which the patient has not yet altogether recovered, supervened during the early period of the disease.

“Partial paralysis of the right arm occurred in my own case, four months after convalescence from the fever had been going on, and lasted about six weeks. One man, on board the *Wilberforce*, was placed on the list, for paralysis, in November, after having had fever in the Niger.*

“In no case was there the slightest appearance of ‘black vomit.’ Bilious vomiting was common in the early stage of the disease; and the attendant retching was very troublesome. Irritability of the stomach, although more frequent at the beginning of the fever, was by no means confined to this period, for it was observed to have occurred also during the height and decline of the disease.

“*Morbid Appearances*.—From circumstances which could not be controlled, the post mortem examinations were by no means so numerous or scrutinizing as is desirable in the investigation of a disease whose causes and nature are comparatively so little known. The results however, although limited, are so far satisfactory that they corroborate, in most respects, opinions derived from former experience on the coast of Africa, more especially with reference to the pathological condition of the gastro-enteric mucous membrane, during and after certain forms of remittent fever. The following statements are founded on the examination of eight bodies.

“*Head*.—In two cases where the head was examined, softening was found in the corpus callosum and walls of the ventricles. In one case there was a small quantity of serous fluid in the base of the brain, and an unusual proportion in the ventricles. The dura mater

* Captain William Allen informs me that he suffered from partial paralysis with wasting of one arm, for many months after an attack of fever, which he suffered when in the expedition up the Niger with Lauder.

was always sound. The pia mater in one case red and injected. No subarachnoid effusion was observed.

“*Thorax*.—The contents of the thorax were in nearly all cases healthy in appearance. Adhesions between the costal and pulmonary pleuræ were found in one instance, with tubercular deposits in the lungs in the state of induration. In another, a cartilaginous state of the tricuspid valves, with serous effusion in the left pleural sac.

“*Abdomen*.—The peritoneum and its processes, as well as the surface of the intestinal tube, had in general a bilious tinge.

“*The Stomach*.—In several cases the stomach contained from one to five ounces of yellowish-green fluid. The mucous coat was invariably softened, whether this fluid were present or not. In three cases livid patches were variously distributed over the inner surface of the stomach, becoming more distinct when the mucous tunic was scraped off, exhibiting stelliform nuclei in their centres. In two cases, the livid marks were arranged in the form of parallel streaks. These pathological appearances were chiefly in the splenic extremity of the stomach and near the pylorus. In one case there was remarkable venous arborescence on the exterior of the stomach, attended with general engorgement of the portal system. Small points of ulceration were observed in three cases, and slight thickening of the mucous lining in one instance only.

“*Duodenum*.—The lesions observed in the duodenum were of the same nature as those in the stomach, but much less marked. In one case the lower portion of this gut contained a yellowish secretion, of the consistence of mucus.

“*The Jejunum* was free from disease, and likewise the ileum, until within three feet of its lower end, where were observed softening of the mucous lining generally and livid spots. A series of small ulcerations were seen in four cases. In one, the membrane was thickened, rough, and the ulcerations had nearly perforated the bowel; this case proved fatal by terminating in dysentery. The agminated glands of Peyer were distinct and enlarged in three cases.

“*Colon*.—The colon was usually nearly empty. On these occasions a dark, bilious, pultaceous matter was found in this portion of the tube, but in small quantity only; it was viscid and tenacious, adhering to the mucous tunic: where lividity or ulcerated points were found at the lower end of the ileum, the same lesions were seen to exist on the arch of the colon. Softening of the mucous coat was remarkable in three cases. In that of the case of dysentery already mentioned, there was softening of the tunic where it was not ulcerated, and induration and elevation round the edges of the ulcerated patches.

“*Liver*.—The liver was congested in one instance; larger than usual in two cases. It was anemic in two cases where the patients died early, and on two other occasions when death took place long subsequent to febrile action. In the latter cases this organ was of a

pale gray colour, and had a dry appearance on being sliced. This condition was not confined to one lobe.

“*Gall-bladder*.—The gall-bladder was distended with bile of the colour and consistence of tar, in three cases; one of which was fatal on the third, one on the seventh, and the other on the ninth day. In another instance the gall-bladder was nearly filled with bloody bile. The man in this case died suddenly, many weeks after the fever had left him.

“The enlarged condition of Peyer's glands, which is regarded by Chomel and Louis as constant in the typhoid fever of France, occurred in three cases out of eight that were examined. In four cases, the subjects of which, with one exception, died early, slight ulcerations of the gastro-enteric mucous membrane were observed. This fact is worthy of attention, inasmuch as it would seem to imply that the cause of the river fever, in whichever way it is introduced into the system, induces an unhealthy action in mucous surfaces much more rapidly than even the low typhoid fevers of France. Chomel does not consider that ulcerations take place in typhoid fevers earlier than the twentieth day, when there is, also, softening of the mucous membrane around the follicles, or in that part of it which covers them. Louis found the patches of Peyer natural in twenty autopsies, made by himself, of yellow fever cases at Gibraltar, during the epidemic of 1828.

“*Spleen*.—In one case the spleen was enlarged, soft, and breaking down under the fingers; in another enlarged, gorged with blood, but firm. This viscus was not altered from the normal condition in the other cases examined. The *pancreas* was not in any case otherwise than natural. The *kidneys* were mottled and larger than usual on one occasion. The *bladder* was in general collapsed. A case in which bloody urine was voided was not inspected.”

To be at all appreciated or understood, this interesting work must be carefully perused and examined in detail: with one more extract we conclude this necessarily imperfect notice:

“When out of the whole expedition there were only fifteen whites that were not attacked with fever in the Niger, it is scarcely possible to offer any opinion as to how far the susceptibility to this treacherous disease was influenced by temperament or idiosyncrasy. Of the blacks, consisting of natives of various parts of Africa, including Kroomen, Americans, West Indians of African origin and East Indians, to the number of 158, eleven only were affected by the fever in the river: they (the eleven) had all been in England, and for some years absent from their respective countries. The disease in them assumed a comparatively mild form, and in no case did it prove fatal; showing that the immunity from endemic disease in warm countries, which is enjoyed by the dark races, is to a certain extent destroyed by a temporary residence in another climate.

“The question as to whether contagion contributed to the spread of the disease on board of the ships may, in my opinion, be briefly disposed of. All were exposed to the same influences, and nearly all were attacked with fever. Two only of the four medical officers who died had been in attendance on fever patients. Dr. Pritchett, Mr. Thomson, Mr. Stirling and Dr. Stanger were among the few who escaped being seized with fever, although they were in constant intercourse with the sick; and I was the last person in the *Albert* laid down with fever. The nurses on board the *Albert* were among the latest taken ill, and one escaped altogether. No fact came under my observation affording the slightest evidence that the disease was communicable from one person to another.

“Does one attack of river fever afford any protection against a second?

“My own experience, added to information obtained from many of my brother officers, and from Mr. King, the surgeon of the *Ethiope*, who has been more in the Niger than any other medical man, is wholly unfavourable to the opinion, that one attack of river fever affords any immunity from a second. On the contrary, those who have once suffered from this treacherous disease seem particularly predisposed to it, if they again venture within malarious influence. Of those who had the Niger remittent, on board the *Wilberforce* in 1841, many were again attacked with fever, on the return of the vessel to the coast the following year, while surveying the Cameroon river and Amboises islands; and when that vessel proceeded up the Niger the second time, in July, 1842, six out of seven who had already passed through river fever, were again seized with it, from the effects of which two died. In many cases the character of the second attack may not be exactly like that of the first, but Mr. Stirling, who saw the patients on the return of the vessel to Fernando Po, considered the fever as in no way differing from that which had come under his observation when in the river during the previous year.”

Dr. Stanger, one of the most healthy persons in the whole expedition, subsequently informed the writer of this notice, that before he entered the river he commenced the use of quinine, and never left it off till he quitted the shores of Africa, and he never had fever at all.

The Baths of Germany, considered with reference to their remedial Efficacy in Chronic Diseases; with an Appendix on the Cold Water Cure. By EDWIN LEE, Esq. Second Edition. London, 1843.

THE majority of writers on the subject of mineral springs, complain of the ignorance and scepticism prevailing among medical men, as to the power and efficacy of these agents in the cure of disease. If such a charge be well-founded, it cannot, at any rate, be ascribed to the absence of published information on this branch of medical science, or to the scarcity of authors who have toiled for the diffusion of useful knowledge, respecting the properties and uses of natural mineral waters. The press of Germany has been peculiarly prolific in publications of this nature, having already produced some hundreds; and it would seem that so good an example has not been thrown away upon our own countrymen, if we may judge from the numerous treatises on mineral waters, of which the literature of Great Britain can now boast.

Of these, the work before us on the Baths of Germany, by Mr. Lee, is by no means an unfavourable specimen. Unlike some of his predecessors, Mr. Lee has presented his remarks in as condensed a form as is consistent with perspicuity; and has restricted them to points in which valetudinarians and members of the profession are likely to be most interested. His fitness for the task he has undertaken is based upon a personal inspection of the springs mentioned in his volume, several of which he has repeatedly visited in the course of the last ten years; and in addition to the actual superintendence of their effects during so lengthened a period, he appears to have carefully studied, and availed himself of the best standard authorities upon the subject.

Mr. Lee's work having already passed through a first edition, may fairly be supposed to have received, in some degree, the stamp of public approbation; we shall, therefore, confine our notice to a few general remarks, without entering minutely upon an examination of the details of the volume.

The first division of the work embraces the Baths of Rhenish Germany and the adjacent districts; the second includes those of Central and Southern Germany; and in each division the springs are arranged in two classes, namely, thermal springs, and cold springs.

After two short prefaces and a long postscript, the author presents us with an *avant-propos* (likewise prefixed to his

“Mineral Springs of England”) in which he advocates a modified humoral pathology, ascribing the origin of many, particularly chronic diseases, to an altered state of the fluids and of the nervous system. In support of these views he quotes the opinions, and refers to the experiments, of various distinguished pathologists, physiologists, and chemists.

Having referred to the numerous inosculation of the sympathetic or organic nerves with those of the cerebro-spinal system, and to the influence of the former over the action of the capillary vessels and the functions of nutrition and secretion, he proceeds to trace the dependence of disease in the organic nervous system upon alterations in the quantity or the quality of the blood by which it is nourished; and states his conviction that an abnormal condition of the ganglionic system so produced, does not fail to react upon, and increase the disordered condition of the vascular system.

He concludes his *avant-propos* by remarking :

“It would be out of place in a small work like the present, *which is intended as much for general as for professional readers*, to enter more fully into the consideration of this subject; enough having been advanced to indicate that, in chronic diseases more especially, our attention should not be too exclusively restricted to the most prominent symptoms, but that these should be traced to their origin, which will mostly depend upon an abnormal condition of the blood, or of the nervous influence; to remedy which, our means of treatment should be chiefly directed; and of these means none are more efficient than the internal and external use of mineral waters, which, by their penetrating operation, and the facility with which they are absorbed, tend most effectually to the end proposed.”

From the foregoing passage it appears that Mr. Lee intends his work for general as well as professional readers; but we very much fear that few of the former will be much enlightened by the contents of his *avant-propos*, unless they should be better acquainted than we anticipate with the anatomy and physiology of the nervous and circulating systems.

In his “General Remarks on Mineral Waters,” Mr. Lee combats the opinion of those who ascribe the benefit arising from a visit to a mineral spring, *entirely* to the journey, the mental relaxation, and freedom from the cares of avocation, the exercise in the open air, and the alteration in their habits of living.

“That many invalids would derive great advantage from the mere change of air, scene, and mode of life, is unquestionable; and it is equally true that without these important auxiliaries, the beneficial

effects would not be produced in many instances; yet there is no doubt that, in the majority of cases the benefit is mainly to be attributed to the medicinal operation of the water, which, though slow, and often not productive of immediate and active effects, is, on that very account, more suited to the class of chronic complaints, in which mineral waters are usually employed. It must also be borne in mind, that in several of the worst cases, in those who resort to mineral springs for relief, these auxiliary circumstances can have no influence, and the benefit obtained is clearly to be ascribed to the waters alone. Many persons are unable to take exercise, care little about the beauties of scenery, take no interest in public amusements, soon become tired, and experience discomfort at being separated from their homes and friends, and are induced to subject themselves to the inconveniences of a long journey to a mineral spring, by the expectation of the benefit which they know they are likely to derive from it."

The author then proceeds to shew the power and remedial efficacy of mineral waters by several examples, and quotes at considerable length the writings of various continental authors, to prove the great advantage to be derived from them in the treatment of chronic diseases, and the caution required in their administration.

It has been frequently observed that the water of a hot spring is longer in cooling than water artificially heated up to the same point; and many physicians residing at bathing places, and other chemists agree in the belief of their singular capacity for telluric heat; this quality, however, has been said to depend upon the saline ingredients with which the waters of a mineral spring are charged, and the experiments of MM. Lonchamp and Anglada have shown that there is nothing in the heat of a thermal spring which can be considered to form an exception to the ordinary laws of caloric.

We cannot follow the author through the whole of his remarks on the state of admixture and chemical combination of the saline, metallic, and gaseous substances with the waters of mineral springs; but we must observe that it is essentially important that practitioners should be acquainted with them in order to understand the mode of action, and to direct the administration of mineral waters.

In the descriptions of the baths of Germany, whatever is striking in the history, topography, climate, scenery, and fashionable attractions of each individual spa, is presented to the reader in a concise, but agreeable form; the best hotels and lodging-houses, and the most salubrious and convenient situations for the residence of invalids, are pointed out; the different springs and their respective chemical peculiarities, carefully noted; and ample directions given to guide the va-

letudinarian in the use of the waters. The principal diseases, in the treatment of which each particular spring has been found beneficial, are also enumerated, and many judicious remarks upon its action and effects are annexed, which will prove more especially useful to the medical profession. The physician who advises a patient to visit a continental watering place, is constantly applied to for instructions by which the administration of the waters shall be regulated; such directions, however, when given, are, we believe, but seldom attended to: and for this reason. The invalid, upon his arrival at his destination, usually places himself under the care and management of one of the local practitioners; who generally, under some pretext or other, directs a course as nearly as possible the reverse of that enjoined by the British practitioner. It becomes then a matter of no trifling importance to be able to recommend to a patient, under such circumstances, a physician upon whose skill and judgment full reliance may be placed by all parties.

We observe, that, in the descriptions of several of the German Baths, Mr. Lee has introduced the names and opinions of the most eminent medical men in their respective localities: but we regret that he has not afforded us this useful information in a greater number. When so many places are treated of, it would occupy too much space to enter more fully into the consideration of this part of the work; we can, however, confidently state our opinion that the account which the author gives of the Baths of Germany, embraces every point of practical interest or importance connected with his subject.

The French and Swiss baths being comparatively little resorted to by English invalids, have not received a very lengthened consideration.

The increasing notoriety of the cold water cure, both on the Continent and in Great Britain, has induced Mr. Lee to give, in an appendix, a short descriptive notice of this method of treatment; commencing with a brief sketch of its originator, Vincent Priessnitz, and his establishment at Graefenberg. Since 1824, not less than forty hydropathic establishments have been formed in different parts of Germany, and most of them under the superintendence of physicians. Marienberg is stated to be one of the most extensive and best conducted of these institutions; it is a large edifice (formerly a convent of *dames nobles*, dedicated to the Virgin), standing on an eminence which overlooks the town of Boppard on the Rhine, and is under the joint direction of Dr. Schmitz and Mr. Mayo, late surgeon to the Middlesex Hospital.

The mode of life, and method of treatment do not appear to vary materially at any of these places; though at Graefenberg, the accommodation is very indifferent, and the diet of a very uninviting description; the dinners being usually composed of cucumbers, cabbage, acid sauce, pork, heavy dough puddings, and other indigestible, and no doubt cheaply purchased articles. Every thing of a stimulating nature, as spirits, wine, coffee, tea, &c., is prohibited.

We do not intend to follow Mr. Lee through the details of the treatment adopted by Priessnitz and his followers, the unfortunate results of which are recorded in every unprejudiced account which we receive from Graefenberg, as well as in the pages of our medical periodicals.

It must be evident to every impartial observer that one great cause of the celebrity of Vincent Priessnitz is his tact in the selection of his cases; even those who have followed the practice at Graefenberg, and have written in favour of the cold water treatment, state that a large proportion of the inmates, on their arrival, labour under no more serious ailments than might be relieved by residing in pure air, by exercise, and plain diet. Dr. Ehrenberg, whose exposition of the hydropathic system is quoted by Mr. Lee, assures us that during his stay at Graefenberg, instead of an assemblage of rare and serious diseases, he saw, on almost all sides, only robust individuals, and fresh-coloured countenances. This enigma was not long in being solved. Among the fresh visitors who daily arrived, there were not wanting persons afflicted with serious diseases, who for their part would willingly have contributed to increase the fame of Graefenberg; but when the first glance taught Priessnitz that they were seriously ill, he sent them away for the most part, telling them that they would not have strength to go through the treatment. He goes on to state:

“Priessnitz himself does not conceal that at most an eighth only of the number of those who address themselves to him are admitted into his establishment. One might then expect that all those whom he receives obtain a cure. This, however, is far from being the case; and for my part, all those whom I saw go away from Graefenberg, left it suffering very much; and several whom Priessnitz had declared incurable, were cured by Weiss, at Treywalden.”

That a considerable number of reputed cures by the cold water system are either false or exaggerated, while the unsuccessful cases are either concealed, or their issue attributed to other than the real causes, is shown by the further testimony of Dr. Ehrenberg.

“Chance furnished me with several opportunities of meeting, a month or two after their departure from Graefenberg, with persons whom I had seen give themselves up to all the exaltation of their enthusiasm, and I was quite surprised at the change which had taken place in their sentiments. A short time ago, I met a young Prussian officer, with whom I had dined several times at the table of Priessnitz. ‘And how are your headaches?’ said I, after the usual salutation; recollecting his bragging, of which I had been more than once a witness; he replied with some confusion, ‘my pains are the same as formerly, and I should have done much better had I gone to pass six weeks at Tæplitz, instead of losing six months at Graefenberg.’ Another patient told me, that far from being satisfied with his journey, he believed he could date from that period the sufferings which now tormented him much more than those for which he had gone to Graefenberg.”

The manner in which Priessnitz accounts for his patients when they happen to die under his care, is remarkable.

“After my departure from Graefenberg,” says Dr. Ehrenberg, “a lady died there; it was then the custom to ascribe the occurrence of death to the bursting of an abscess internally, but on this occasion, the opening of the body gave the lie to the favourite explanation. When the relatives inquired what had been the cause of the fatal termination of the case, the answer which they received was, that the patient’s neck was too short to allow her to live. Where could another man be found who would dare thus to express himself? In what other place than Graefenberg would there exist a public, who instead of perceiving in such an answer the proof of the grossest ignorance and of an unblushing effrontery, would, on the contrary, discover that of a profound wisdom?”

In conclusion, we consider Mr. Lee’s work an extremely useful publication; and although, as he himself admits, it has some defects, yet its general accuracy in all important details, and its conciseness, recommend it strongly to the notice of the public, and especially of the medical profession.

Clinical Remarks on certain Diseases of the Eye, and on Miscellaneous Subjects, Medical and Surgical, &c. &c.
By JOHN C. HALL, M. D. (of East Redford). London, 1843; Churchill.

WE have read this work for the double purpose of instruction and review, and cannot extend to it charitably, as we are disposed, even the meed of praise due to industry or arrangement—novelty or interest it possesses none; and wherefore ever brought before the public we cannot divine, not being within the puff of a Charlatan, nor evidently the speculation

of a bookseller. If object it was ever intended to have, it must have been that of illustrating a few cases in the ordinary course of practice treated by the author; one of which may lead us to suppose, that he (the author) has an aristocratic connexion, for the subject of it was a girl whose name was, as is usual in such cases, from motives of delicacy suppressed, but of whose standing in society we may form an opinion, from her being "the daughter of the coachman of Granville Harcourt Vernon, Esq., M. P., for East Redford," p. 29. The Doctor is remarkably polite to his patients as well as in his writings, for whenever he had occasion to operate, as at p. 65, the "young lady was *requested* to sit in a chair, while an assistant separated the lids," &c., &c. Without particularizing more fully, for we really know not what to quote; that might in any way interest our readers; we may mention that the work is divided into two portions, and that the first and most extensive is devoted to "certain Diseases of the Eye," some of which, from the author's description of them, appear to us very *uncertain*. This part is chiefly compiled from the standard writings on this subject; or made up of quotations from Mackenzie, Laurence, Meddlemore, Tyrrell, or Scarpa, on whose works indeed it seems intended as a running commentary, and more adapted to the pages of a review, than any separate treatise.

The second portion of this work is devoted to a number of medical and surgical subjects; fistula, fracture, cancer, uterine hæmorrhage, gout, and indigestion, &c., &c. each handled in a manner similar to the diseases of the visual organs. On the subject of bronchocele, however, we must not omit mentioning that Dr. Hall has related a number of cases cured by the use of Liq. Potassæ and leeching, the former in doses of ℥ xxiv. three times a day.

The Anatomy of the Arteries of the Human Body, with its Application to Pathology and Operative Surgery, in Lithographic Drawings, with practical Commentaries. By R. QUAIN, Professor of Anatomy in University College, &c. &c., and JOSEPH MACLISE, Esq., Surgeon. Folio.

WE have received six Numbers of this excellent work, viz., Nos. 10, 11, 12, 13, 14, and 15. Each Number, as many of our readers are probably aware, consists of a fasciculus of lithographic plates, in many instances as large as the natural size of the objects they represent, with explanatory letter-

press, octavo size. The plates are exceedingly beautiful and faithful, and many of them wonderfully true to nature, exhibiting the force and spirit of a first-rate artist. Plate 55, Part 11, in which the subject is a boy, exhibits, independent of its anatomical merits, the purest artistic feeling. In this respect these plates remind us of the admirable delineations in Cowper's *Anatomy*, Mr. Maclise having the rare power of displaying at once both accuracy and freedom. We have only one plate that we are disposed to find fault with; in plate L, fig. 1, the pancreas appears to us to present more resemblance to the diamond-shaped divisions of a pine-apple than the natural appearance of the organ, but this perhaps is hypercriticism.

As a book of reference, to refresh the memory of the anatomist, or of the surgeon, previous to the performance of an operation likely to involve the arteries, this beautiful work must be of great value, and its cheapness puts it within the reach of all. Mr. Quain has down all that might be expected from his high character in the descriptive letter-press; the usual and the unusual distribution of the arteries being carefully described, as well as their surgical relations.

Some Account of the African Remittent Fever which occurred on Board her Majesty's Steam Ship Wilberforce, on the River Niger, and whilst engaged on Service on the Western Coast of Africa; comprising an Inquiry into the Causes of Disease in Tropical Climates. By MORRIS PRITCHETT, M. D., F. R. G. S.

THIS work is one of great practical importance to the medical profession, particularly to the naval and military departments, as it contains many remarks bearing the stamp of close observation, on the subject of malaria and miasmata; from which both the navy and army have at all times so greatly suffered; but yet there is a want of care in the compilation, for which the author in his preface apologizes:

“The pressure of the duties which devolved upon me during the prevalence of the fever must plead as my excuse for any omissions which may be observed in my account of the cases:—in consequence of almost every European in the ship being attacked, and the services of both the assistant surgeons being required elsewhere, added to the indisposition of the late Mr. Woodhouse, Assistant Surgeon of the *Albert*, during the time he was on board the *Wilberforce*, I was left

nearly unaided, and was at one time actually compelled to perform all the duties of apothecary, nurse, and cook, besides those of medical attendant to the whole of the sick on board. For a period of nearly six weeks I was never undressed, the nature of the cases requiring close watching both by night and by day, immediately to combat unfavourable symptoms as they arose. The active duties which have recently again devolved upon me, and the hurry of preparation for foreign service, have, I fear, prevented that careful revision which would have enabled me to correct errors and to make additions."

Our author commences by giving a slight sketch of the voyage, and places where they stopped; also an account of the cases of fever, which amounted to fifty, but we regret that he did not enter into further details of some of the cases that occurred after leaving Grand Bassa, or mentioned whether the symptoms were similar to those that occurred at the confluences of the Niger and Tchadda: those that were first attacked with the fever were men of colour. The author remarks that—

"These were the persons principally employed in the necessary business of wooding and watering, and had been selected for the duty in preference to white men, in the belief that they would be less likely to suffer from exposure in the new country than whites. I had, however, already had opportunities in the West Indies of observing that negroes seem frequently to have less power of resisting pathogenetic influences in foreign climates than white men. And many of the blacks and mulattos we had on board having become accustomed to the colder climates of the north, they were probably at least as liable to be attacked with disease as the European."

Again he says, after having given a short statement of the seven cases of fever which occurred among the men of colour, viz., the day of attack, and whether the patient was on shore at Grand Bassa, or Sierra Leone, &c., that

"Up to the date of our entering the Niger, five cases of fever had also occurred among white men. One only of these had been employed in wooding, &c., at Grand Bassa,—the remaining four had not been out of the vessel. But in none of them were the symptoms urgent, and they speedily gave way in all to proper treatment. The disease was decidedly of a more mild description than in the black and coloured men before specified.

"From the foregoing it would appear that the negro, when he has become accustomed to a European climate, is less able to resist the causes of disease in hot countries than the white man. The officers generally were greatly exposed to atmospherical vicissitudes and inclemencies, and to fatigue, and yet without fever, in a single instance, having presented itself among them."

We will now quote a passage from the latter end of the book, in order that our readers may the more easily judge of the justice of the observation which will follow :

“The old resident in intertropical countries very constantly suffers most severely during the prevalence of rains, and declares this to be the most sickly period. The more recently arrived from Europe, on the contrary, are principally affected in the dry, hot season, usually passing through the wet season without suffering much from disease. The native Africans themselves fall sick in the rainy season, like the old resident European, and in the dry season, feel themselves healthy. Accordingly, while the whites were nearly all affected with fever at the confluence of the Tchadda and Niger, the natives were perfectly well. But previously, when the vessel was wooding and watering during the rainy season (July, 1841) at Grand Bassa and Cape Palmas, many of the Africans were affected, whilst the Europeans, generally, enjoyed good health.”

From the above statement of facts, should it not be the duty of physicians on board her Majesty's vessels to recommend their captains to send the coloured men on shore when necessary during the dry season, and the white men during the rainy season, as by that means fever might be kept out of the vessel, and many valuable lives saved. Our author next proceeds to discuss the cause of fever. We must allow him to speak in his own words. After having slightly touched on the nature of fever, &c. &c., he says :

“Fever, in the more temperate latitudes of the earth, being more prevalent in marshy districts than elsewhere, the idea of a poison, the efficient cause of the disease, engendered in such districts, has long had possession of men's minds ; and a *miasm* or *malaria* having been imagined, all became easy after this : as a man becomes affected in a certain determinate way by a dose of laudanum, so does he become affected in an other determinate way by a dose of marsh miasm or malaria. To pass by the inability in which all have hitherto found themselves to show any of this miasm or malaria, or to demonstrate its existence by any chemical or sensible test, many have been sadly puzzled to find themselves surrounded by fever of the worst character, in situations and circumstances very different from those in which malaria is by general consent believed to be especially engendered.

“The air of the atmosphere of any one country would not appear to differ sensibly in its chemical composition from that of any other country. It is identical in the wilds of Africa, and in the crowded streets of London ; at the level of the sea, and at an elevation of sixteen or seventeen thousand feet above the earth's surface. There are other elements or conditions, however, which, though they are not taken into the chemical reckoning, ought to arrest attention, the rather as they are fluctuating, and therefore the more likely to be connected

with the varying effects which the climate of every parallel of latitude and of every spot on the earth's surface has upon the health of man. The varying elements or conditions of the atmosphere are its temperature, its moisture, and its electricity. There is also another agency which appears to me to have attracted less attention generally than it merits, in the investigation of the causes of fever in tropical countries; this is what has been spoken of under the title of the solar influence".

He next attacks with vigour those authors who think they have satisfactorily accounted for the origin of fever by malaria. It is best to use his own words:

"The majority of writers, however, seem to have a comfortable persuasion that they have satisfactorily accounted for the origin of fever, when they have invoked the agency of the effluvium or miasm entitled malaria, the product of the decomposition of vegetable matters under the influence of heat and moisture. To such lengths has this theory gone, that so respectable an authority as Dr. Macculloch (Essay on Malaria, p. 31) may be found speaking of a pond constructed to hold a few gold fishes, and a meandering stream ornamented with bulrushes and water lilies, as common sources of disease and death, and that in a country so temperate as England. Nevertheless, Dr. Macculloch may be found informing us that Singapore, which lies under the direct rays of a vertical sun, and abounds with swamps and jungle, and where all the conditions to the production of miasm or malaria exist in perfection, enjoys great immunity from fever. This single fact seems sufficient to overthrow all preconceived ideas of malaria; and, to use Dr. Macculloch's own words, makes us suspicious of all the information upon which the reasonings in regard to its influence have been founded."

The next person whom he attacks is Dr. Thornton, who being a great disciple of the doctrine of malaria, is somewhat puzzled to give a reason why fever is more prevalent during the months of August and September, when the Hoogly is overflowed, than during the months of May and June, when the river is low, and the banks exposed to the excessive heat of the sun. He further states that Dr. Robert Armstrong has penetrated the swamps of Batavia and Judnegut, and also at Jamaica entered the mangrove swamps at sun-rise in quest of the agent malaria, and examined the air and water, all without success. We need not go on to enumerate names of high authority who support the doctrine of malaria; but we must confess that Dr. Pritchett does not allow sufficient influence to this poison, as there is no doubt that such exists, though observers have not yet been able to prove it chemically; yet there are sufficient facts to prove its existence; for instance, the extreme term of life of those who inhabit the

districts where it prevails seldom exceeds forty to fifty ; that at Petersburg in Virginia, a native and permanent inhabitant seldom arrives at the age of twenty-eight. We would agree with Dr. Pritchett if he said that there must be some other exciting cause besides malaria, but we cannot go so far as he does: after stating that Dr. Wilson, inspector of naval hospitals and fleets, says that South America, abounding in marshes and lagoons, most part situated within the tropics, enjoys a singular immunity from endemial disease, he observes, that—

“ With the continent of Southern America before us, we seem to have an assurance that vegetable matter, in a state of decomposition under the influence of a high temperature, is not the chief agency that produces the fever which prevails so fatally in certain intertropical countries. Nay, I conceive that we are warranted in going further, and in saying, that the doctrine of miasm or malaria is a mere hypothesis, which, from having been cherished over-fondly, has been prejudicial much rather than useful.”

This certainly is a strong fact against malaria, but then we may account for it that the other necessary excitants are absent. He also supports his argument by the fact that our troops have been stationed on elevated situations, without vegetation, and marshes, viz., Crawford's Island, on the Western Coast of Africa, and yet the mortality was nearly equal to that of Sierra Leone, but he forgets that there are well-established facts, where mountainous districts have almost been depopulated, whenever the wind was blowing over morasses at some distance. We will cite one instance: Orlandi mentions, that when the south wind passed over some stagnant waters, it infected the air of the hills. These heights became salubrious only when Pope Paul V. had caused the marshes to be drained. May not the malaria have been carried to those elevated situations which Dr. Pritchett has brought forward to support his opinion, and in our opinion it will be confirmed by further observation. We highly approve of the manner he has treated the idea of attributing it to various local and accidental phenomena, such as volcanic eruption, &c. &c., though he must grant that Dr. Webster, of America, has brought forward a number of facts which give some appearance of probability to those ideas, and it is the received opinion amongst the inhabitants of volcanic countries, such as Naples, that sulphur fumes and acid emanations are the cause of this disease. This theory cannot be even supported. We will quote his own words upon the theory of animalcules:

“ With regard to the theory of animalcules, as the cause of epidemical and epidemical febrile diseases, a theory which has of late acquired some advocates, I have little to say. The subject has been carefully investigated by some of the best microscopic observers, especially by Henle, in Germany, but nothing has been discovered. The accomplished observer just named has never succeeded in catching any of these malignant infusories within the field of his microscope. It has also been very properly observed by Mr. Farr, that the hypothesis of animalcules does not satisfactorily explain the cause of epidemics, inasmuch as it does not show why the animalcules should be created at distant times, or how, being produced, they should have any power to occasion such effects as are ascribed to them. For my own part, I can conceive it possible that animalcules should co-exist with a particular epidemic, and yet have nothing whatever to do with the production of the disease; they might arise under the influence of the same agent as the epidemic itself. When we see epidemics, such as plague, cholera, and small-pox, spreading from hot climates to cold, and from cold to hot, as it is shewn by the history of the world that they do, we must needs regard them as connected with some far pervading physical cause, with the nature of which we are unacquainted. That some particular constitution of atmosphere is necessary to the prevalence of every disease, is evident from the fact, that certain diseases always exist sporadically, more or less, and that it is only periodically, that they greatly prevail or become epidemical.”

The theories of carbonic acid gas, and that of carbonated hydrogen, are slightly mentioned by the author. He says, that if either of these were the exciting cause, that the inhabitants of Franzenskad, in Austria, and that the men working in mines, would suffer frequently from the disease, which is not the case. The latest theory which he mentions, is one that has very lately been put before the medical public by Professor Daniel, of King's College,—that of sulphureted hydrogen being the cause of intertropical fever. In April, 1840, having examined some water brought from the rivers of the Western coast of Africa, he detected this gas; it was immediately concluded that nothing more was wanting to explain the cause of the insalubrity of the climate. We will now quote our author, as he completely overthrows this theory by well founded facts:

“ In obedience to directions received from the inspector general of naval hospitals and fleets, on the Wilberforce reaching the coast of Africa, and also in proceeding up, and on our way down the Niger, the most rigid and careful investigation of the waters was instituted every hour, the tests used being sulphate of copper, nitrate of silver, solution of arsenic, ferrocyanate of potass, carbonate of lead, tartrate of antimony, and lastly, the terchloride of gold, but in no instance

was the slightest trace of sulphuretted hydrogen detected. There can be no doubt, therefore, that the sulphuretted hydrogen found by Professor Daniell arose from the decomposition of the water in the course of its transmission to England from the coast of Africa; nor is it necessary to go to the mouths of the Niger and Gambia to procure water, which, after being kept five or six weeks, shall yield sulphuretted hydrogen gas abundantly; the water of the Thames may be tried with an assurance of having by and by a very satisfactory demonstration of this fact.

“But even if sulphuretted hydrogen were evolved from the waters of the west coast of Africa, would this explain the fevers which there prevail? All the world knows that every chemical lecturer produces sulphuretted hydrogen gas in abundance in his lecture-room, and that its odour is sometimes disseminated for the edification of the audience, but never with the effect of inducing African fever among them. In the *Willberforce*, an evolution of sulphuretted hydrogen ensued to a very disagreeable extent on several occasions, in consequence of the bursting of some cases of preserved meats; but in no instance did any disease take place from this cause; when the stench was excessive, a slight faintness, followed by nausea, was complained of for a moment; but these symptoms speedily passed off on coming into the open air, and no ulterior ill effect ensued. An occurrence of this kind took place at St. Antonia, Cape de Verds, on the 17th of June, 1841, when the heat was very intense, and the stench so intolerable as to drive every one from the immediate neighbourhood whence the canisters were removed and thrown overboard.”

Our author, having discussed almost all the theories that have been brought forward as causes of endemial fever, says:

“In taking a retrospective view of the African remittent fever, which prevailed in the *Wilberforce*, in common with the other vessels of the Niger expedition, it is somewhat remarkable, that although we entered the Niger on the 15th of August, anchoring inside the bar of the Nun, and refitting there till the 20th, when we steamed onwards, it was not till the 4th of September that the first case was put on the sick list.”

They were under the impression, that after having passed the Delta they were in a salubrious region, and he describes well their feelings of security and the beauty of the scenery, when suddenly, and when they least expected it, the dreadful disease seized on them. The weather was fine until they arrived at Lodali, which they did on the 2nd of September. The thermometer was never above 85°, nor below 70°, but then it became intensely hot. He says that

“The climate of the western coast of Africa differs from that of the West Indies, and most other hot countries, in its extreme humi-

dity ; the atmosphere is literally for the major part nearly saturated with moisture, a fact which is shewn by the hygrometer ; and which is speedily learned from experience by all who visit the country in the rapid destruction of clothing, and the constant formation of mildew on almost every thing when laid by for a single day, in the course of which boots, shoes, woollens, &c., become covered with a complete white coating of this vegetable substance.

“ This excessively moist condition of the air is temporarily abated by the condensation of its vapour into rain, when the breathing becomes more free, and a sense of renovation is experienced, that is quite refreshing.”

He then shews that the body becomes surcharged with carbonic acid in very moist climates, and that several of the emunctory organs become deranged, causing constitutional derangement, which in tropical climates becomes manifest in the production of remittent fevers, which he considers as an effort of nature to restore the normal condition in the various constituents of the frame, which have become deranged by certain atmospherical conditions ; he brings forward cases where the atmosphere in the vessels was kept dry under deck, and the crews suffered little from fever. Our author having sufficiently proved that moisture is a predisposing cause to fever, states in full his own theory, which we will give :

“ The system, from exposure to a hot moist atmosphere for any length of time, may become to a certain extent predisposed to the advances of fever, or be rendered extremely liable to be acted on by any of the exciting causes of the disease, which appear to be various. That which was observed as pre-eminent in the present expedition, was solar influence ; but I believe that the depressing passions, fatigue, bad or insufficient food, inadequate clothing, and drunkenness, are upon occasion effectual means of immediately inducing as well as predisposing to the disease.

“ The physical agency which presides over and regulates the secretions is in all probability electricity, emanating from, and being subordinate to, the nervous system. The electrical fluid, however, is influenced by certain conditions of the atmosphere, which alter its state, and modify its distribution, causing it in one instance to be in excess, in another, to be deficient.

“ This invisible agency may probably be considered as one of the means employed by nature for eliciting and sustaining life with its various attributes ; it may be viewed as a power, a force, conveyed by the nerves to the different structures, and under ordinary circumstances supporting these in their integrity, and enabling them to perform the processes which pertain to them severally.

“ All substances are supposed naturally and usually to contain both the positive and negative kinds of electricity in a state of affinity

and equilibrium ; any combination of circumstances disturbing this equilibrium overcomes the natural attraction of the two kinds of electricity for each other, and disunites them. Moisture being a conductor of electricity, a separation of the two electricities possessed by the lower strata of the atmosphere, where the degree of humidity is greatest, readily takes place ; and then the air more immediately in contact with the earth is often observed to be in a negative state, a state in which it may be supposed to attract and conduct away the positive electricity of the body, and so produce exhaustion of the nervous system in consequence of its incessant efforts to supply this vital stimulus. An individual subjected under such circumstances to solar influence, almost certainly manifests that peculiar derangement of the system which is known under the name of fever, in the more severe cases of which there is an obvious tendency to decomposition among the constituent elements of the body, even before the extinction of life : the vital laws are here superseded, the ordinary physical laws come into play. If this goes beyond a certain very limited extent, life ceases, and the body is resolved into its constituent elements in new forms of combination."

He then brings forward proofs in support of his theory. We will only mention one or two. Dr. Robertson, surgeon of the Weasel, in the river Gambia,

"States, that when feeling the pulse of a boy who was dying of fever, at the moment the lad expired, he received a shock, as though electrified, attended by a disagreeable sensation, not easily to be expressed, and quickly followed by a prostration of both strength and spirits, so that he had almost fainted before he reached his cabin. Dr. Robinson afterwards suffered a most severe attack of fever."

Again, the author's own experiment :

"In some imperfect experiments made by myself on persons affected with fever I observed that on making them take hold of the wires communicating with a needle, delicately suspended in a coil of silver wire, a considerable variation of the needle immediately ensued ; but I regret to say, that in consequence of the great number of patients I had to attend to at this time, and the numerous occupations which devolved upon me, as well as from being without the proper means of isolation, I was unable to institute experiments sufficiently satisfactory to warrant me in giving them in detail."

Having given very fully the opinions of our author, we cannot pass them over without a few words. We cannot understand why he has brought in electricity as an agent in causing fever, an agent of which we may say, nothing is certainly known. Dr. Wilson Philip has spent a long life in endeavouring to show its power over the animal economy, but with comparatively little success—why then was not our

author content with polar influence, in which, in our opinion, he has sufficient proofs to bear him out? that, with humidity and fatigue, will sufficiently account for those anti-tropical diseases; but we must give our author credit for originality. He makes some valuable remarks upon acclimatization, which we would recommend to our readers. We must now give some account of the symptoms; we will allow Dr. Pritchett to speak for himself.

“The symptoms of the febrile disease were irregular, and appeared to depend very greatly on the constitution of the individual attacked, and on the nature of the exposure to which he had been subjected. The disease frequently advanced at first very insidiously, the symptoms of derangement being greatly diminished, if not altogether absent, in the morning, but returning greatly increased in violence as evening advanced, so that many, who in the early part of the day made little or no complaint, were labouring under a considerable degree of febrile excitement before night; at its commencement, the disease sometimes partook of the intermittent type, it then gradually became remittent, and occasionally merged very nearly into the continued form; or otherwise, it was sometimes evidently remittent at its commencement, and changed into the intermittent type as it approached its termination, and the patient became convalescent. Many were merely indisposed for several days, before more decided indications of serious disease made their appearance. The usual complaint then made was of feelings of debility, and want of appetite, with derangement of the stomach and bowels—either constipation, or diarrhœa. Then came a severe splitting headach, and intense heat of skin, with pain in the chest, a dull uneasy sense of oppression there, and sometimes a slight cough, followed by nausea, and vomiting of bilious matter. In some cases, even at a very early period, the countenance looked livid or dusky, and there was a dark areola around the eyes. The pulse was generally found quick and small; it was seldom full and bounding, or such as would have warranted depletion; in the course of the disease, the pulse frequently became slow, with remarkable intermissions. There was also at times partial retention of urine, requiring the use of the catheter. Generally on the third day, the symptoms were greatly increased in violence, the speech becoming altered and faltering, and the thirst being most intense. On feeling the pulse of the patient at this time, a hot uneasy sensation remained in the fingers, which could only be effectually removed by washing.”

These were the general symptoms, but some were attacked suddenly, though in perfect health; there was vomiting of bilious matter, sometimes yellow, and others dark green. If we call to mind the symptoms of the remittent fevers that have occurred at Cadiz, Gibraltar, Sicily, Sardinia, East and West Indies, United States of America,

Sierra Leone, and the Bights of Benin and Biaffra, we must remark the great similarity, though sometimes one symptom has been more prominent, for instance, in the one now treating of the black vomit was wanting, though the yellow skin was present. We might enumerate more differences, but we are afraid of drawing this out to too great a length. With respect to the morbid appearances, he says :

“ An inflammatory and congested state in some portion of the stomach, either about the cardiac or pyloric orifice, and an appearance of the same kind about the cœcum, extending upwards to the ileum, and down to the colon, were the principal morbid changes encountered. Some enlargement, and probably commencing ulceration of Peyer’s glands, were also commonly enough observed. The gall bladder was usually distended, and its duct often seemed obstructed. The organ, however, that deviated in the greatest degree from the healthy condition was the spleen, which was commonly enlarged and pulpy. Such is the morbid anatomy which I found in connexion with this insidious and dangerous malady, which almost makes good the old maxim, ‘*medicina non agit in cadavere.*’ ”

To these facts we cannot attach much importance, as he was only able to examine two cases.

We now arrive at the treatment, of which Dr. Pritchett says :

“ In dealing with the African fever, I soon discovered that the efforts of the practitioner were best directed when they were used simply in assisting nature to overcome the disease.”

He says he first tried blood-letting, cold affusion, and warm bathing; these he quickly gave up. We wonder he did not recollect the remark of Dr. Boyle, of Sierra Leone, who says that he scarcely ever saw a patient recover after bleeding; he then mentions the different modes of treatment he used, and the success he has had with each, and sums up with the following:

“ With regard to specifics in the febris Africana, then, it may be very safely said that at present we have none; for mercury, which has hitherto being viewed by many as the sheet-anchor, has entirely failed in the river Niger; blood-letting has been declared highly injurious; quinine has equally been found abortive in the early stages; and as for the drops of Dr. Warbourg (probably composed of morphia and quinine), they, too, have proved a total failure. The practitioner is therefore left to the resources which sound medical principles, good sense, and experience, may suggest, and the symptoms of the disease require; probably the best and safest practice of all will be found to consist in that which simply endeavours to assist nature in those efforts

that tend to the patient's improvement, and to check those that tend to his destruction ; by attempting to take the enemy by storm, we should too frequently, I fear, do more harm than good."

This is a complete blow to Dr. Warbourg's specifics, of which Sir A. Halliday, Deputy Inspector-general of Army Hospitals in the West Indies, has said, that, from his success, he thought the secret should be bought, and the discoverer properly rewarded by the country. We see that at present there is no line of treatment which has been attended with marked success ; how could we expect otherwise, as the medical men who were engaged in the expedition have not had sufficient experience, or opportunity to test the different kinds of treatment ? We cannot conclude without taking some notice of the author's remark on prophylaxis. He says :

" As to the best means of warding off the attacks of the African remittent fever, while employed on the coast, which may with great propriety give name to the disease (for it differs somewhat from that of other hot countries), there is no doubt that in addition to ventilation and cleanliness, which are altogether indispensable and primary measures, much stress deserves to be laid on employing the people regularly, short of fatigue ; on keeping up their spirits, and furnishing them with amusements ; on guarding against their exposing themselves to the sun's rays, or the rain ; on supporting the constitution by nutritious food,—in short, by doing every thing that may conduce to maintain the mind and body in a state of high health."

And again :

" Having in the first portion of this work spoken of the influence of moisture in producing disease, it may be supposed that in removing humidity, we do much towards the preservation of health. My own opinion is, that in tropical countries, this point is one which cannot be too strongly insisted upon. In a wet season, with constant rains, to keep a ship dry will probably be found impossible ; a slight approximation only to this result will then be attainable. Stoves placed in different parts of the ship will probably be found the best means of keeping her dry ; in steam vessels, the heated air of the engine-room, as was first practised in the *Wilberforce*, at the suggestion of Capt. Allen, may very advantageously be conveyed to various parts of the holds, &c. With regard to chemical substances, I do not think they will ever be found to answer the object proposed in their employment.

" Great care should at all times be taken to keep the surface of the body as much protected against the more immediate application of the damp chilling air, as is compatible with convenience. At present flannel is the covering generally adopted, but probably an envelope of silk will be found not only more agreeable but also more efficacious for this purpose than any other. Spun silk under-clothing

should, I think, be universally adopted by invalids in all climates ; its cost I fear will prove a barrier to its general adoption ; but to those whose means enable them to make use of this material it will be found from its non-conducting properties, a most valuable, additional means of preserving their health."

We will be excused quoting so largely upon the subject, but our excuse is, that Dr. Pritchett is the first author who has so strenuously recommended protecting the body from damp air, and, as we concur with the Doctor in his idea about humidity, we cannot leave down our pen without recommending the adoption of his advice in all inter-tropical climates.

SCIENTIFIC INTELLIGENCE.

On the Characters and Structural Peculiarities of a Group of morbid Growths in which cancerous Affections are included, by Dr. Hodgkin.—This paper was in continuation of a subject which had already been brought before the society on a former occasion by the same writer.

After describing the different appearances revealed by the improved microscopes of the present day, the author endeavoured to connect the nucleated cells, which Müller has shewn to exist in these structures, with the production of those compound cysts which were described in the former paper, and pointed out as affording the type of the adventitious structures referred to.

The following are the conclusions which the author is desirous of drawing from the observations contained in the paper :

1st. The unrestricted confirmation of the views contained in the former paper as to the existence of the type of compound serous cysts in the adventitious structures referred to. The author had not only found it in man, but in several of the inferior species of mammalia, and in birds. Several able observers had, on examination, coincided with his views, and he mentioned the late Professor Delpech, and the present Professor Rokitanski, having personally informed him of their having, independently, been induced to adopt his views.

2nd. That the microscopic examination of these tissues, though extremely interesting, does not furnish perfectly conclusive tests of any particular form of adventitious structure to which a specimen may belong, but that it demonstrates the application of the nucleated cell theory, whilst it is fatal to that of cancerous matter being formed in the blood and eliminated at the spots at which the tumours become manifest. It therefore furnishes an important argument in favour of operation, though other practical considerations require to be attended to before operation is decided on.

3rd. That to have a complete view of the mode of production of these structures, we must combine the cell theory of Schwann and Müller, the coagulation principle which the author had previously suggested, and the process of organization investigated by Mr. Kiernan—three stages of development which appear to occur in the order just enumerated ; and that none of the phenomena, taken singly, is an adequate test of malignancy, which, as stated in his first paper, must be regarded as the sum of several characters.

4th. That chemical analysis, though extremely important and interesting, affords an imperfect and inadequate criterion, as the principles concerned may vary or be changed in the progress of development.

5th. That, in operating for the removal of a tumour of this class, it is extremely important to leave behind none of those minute cysts which often form granules in the surrounding cellular membrane, though it may appear in other respects perfectly healthy. This appears to be a mode of extension of the disease independent of inflammation.

6th. That experience teaches us that the infiltrated form of these diseases occurs in the structures in the neighbourhood of the purely adventitious growth, when these structures have been the seat of inflammation, and that the chances of success from operation are consequently infinitely diminished when such surrounding inflammation has taken place. The presence of the peculiar matter of the disease in the interior of vessels appears to be one of the modes in which infiltration, the result of inflammation, exhibits itself, and is, therefore, not a valid argument in favour of the pre-existence of such matter in the circulating blood. —*edical Gazette.*

On the Nature of the Ossification of Encysted Tumours, by John Dalrymple, Esq., Assistant-Surgeon to the London Ophthalmic Hospital.—The author removed from the upper eyelid of a patient an encysted tumour, about the size of a pea, which was found to consist of concentric layers of hard earthy material. Upon examining the structure by the microscope, he found that the layers were composed of epithelium scales closely agglutinated together; but instead of the usual transparent and thin lamina, with its central nucleus, they were thickened and hard, and contained granular earthy molecules, which could be removed by immersion in weak muriatic acid. No amorphous earthy deposit existed around or among the scales, which were opaque, of a light brown colour, with a clear and large central nucleus. Having added some observations on the microscopic appearances of other encysted tumours, the author concluded by noticing shortly the difference between the origin of proper ossific growths and that of the tumour described by him. Accompanying the paper was a drawing which exhibited the epithelium scales of which the tumour consisted, with the granular earthy material disseminated through them.—*Ibid.*

On the Presence of Spermatozoa in the Fluid of Common Hydrocele, by E. A. Lloyd, Esq., Assistant-Surgeon to St. Bartholomew's Hospital, and Surgeon to Christ's Hospital. [In a letter to the President].—The object of the author was to announce the fact, that in two cases of common hydrocele, in which he examined the fluid withdrawn by tapping, by the microscope, he found numerous spermatozoa. The first case occurred in the early part of last winter. Subsequently to that, in the course of a few weeks, he examined the

fluid in four other cases, but without finding any animalcules in them. Three months ago, the second case occurred. The patient was 63 years of age, and had been operated on previously for hydrocele, about fifteen times. Sixteen ounces of a greenish yellow fluid, so albuminous as to be quite adhesive, were drawn off. The author counted forty of these microscopical beings in one drop of this fluid. Some of the animalcules were observed to retain their power of motion for three hours after the fluid had been withdrawn. Blood globules, transparent cysts, and small granular bodies, also portions of epithelium, or what much resembled it, were likewise found in the fluid. The author concluded by mentioning that since the last case he has examined the fluid of many hydroceles, but had not met with spermatozoa in any of them.—*Ibid.*

Influence of Season on Sickness.—Dr. Guy, of King's College Hospital, has published an interesting essay in the last number of the "Statistical Journal" on the influence of the season and weather on sickness and mortality. The conclusions deduced by the author from an examination of the mortality bills and registry kept at King's College Hospital and the Carey-street Dispensary are—

1. The amount of sickness in the central districts of London during the year 1842 varied directly as the temperature; being a maximum in August, the hottest month of the year, and a minimum in January, the coldest month.

2. The diseases which determined the order of sickness were febrile and catarrhal affections, the contagious exanthemata, and the disorders of the digestive organs, to which may be added the mixed group, consisting of gout, scrofula, &c.

3. The diseases of the organs of respiration followed the inverse order of those already mentioned, and were inversely as the temperature, being most numerous in the colder, and fewest in the hotter months.

4. The temperature did not appear to exercise a marked influence on the other classes of disease.

5. The hygrometric state of the air appeared to have little effect on disease, and if it produced any effect it was on the diseases of the organs of respiration, which were in excess during the months in which the quantity of moisture in the air was the greatest, but these were also the coldest months.

6. The mortality for the metropolis during the year 1842, was greatest in the first quarter and least in the second, and was inversely as the sickness, except that the mortality of the third quarter exceeded that of the fourth.

7. The diseases which chiefly influenced the order of the quarters in respect of mortality were those of the chest, to which may be added, as following the same order, the decay of nature in the aged.

8. The order of the seasons in respect of sickness and mortality differs year by year, and does not admit of being reduced to any precise rule.

9. As a general rule, but one admitting of many exceptions, it may be stated that the amount of sickness tends to vary directly, and the amount of mortality inversely as the temperature.—*Prov. Med. Journal.*

Treatment of Phthisis.—M. Pereira, of Bordeaux, sent a memoir on the treatment of pulmonary consumption. The author affirms that he has arrived at results which leave no doubt whatever on the possibility of curing phthisis, even when arrived at a stage in which the diagnosis is quite certain. The method employed is founded on the analogy between tubercles of the lungs and of other organs, and consists in the use of cod liver oil and tonics. Of 9,000 patients received into the author's wards at the Bordeaux Hospital since 1838, 362 were phthisical; and of these 110 died; 213 were discharged; one half of the latter, at least, were in a satisfactory state.—*Academy of Sciences, Paris. June 5, 1843.*—*Prov. Med. Journal.*

Ligature of the common Iliac Artery.—Dr. Peace, one of the Surgeons of the Pennsylvania Hospital, has recently tied the common iliac artery with success. The operation is stated by the author to have been “a modification of that of Sir A. Cooper, but retaining the great advantage—that of the greater facility of separating safely the peritoneum.” He thus describes his operation:—

The patient having had his groin shaved, and placed upon a table of a convenient height, on the morning of the 29th of August, before the medical class, assisted by my colleagues, Drs. Randolph and Norris, and the experience of Dr. J. Rhea Barton, I proceeded to make an incision seven inches in length, through the integuments, commencing at a point on a level with the umbilicus, two inches within and three inches above the anterior superior spinous process of the ilium, and approaching to within an inch of Poupart's ligament, and terminating one-half an inch above the external ring; this divided the *arteria ad cutem*, which was twisted by the artery forceps; no ligature was required; next the superficial fascia was divided, then the tendon of the external oblique was exposed, nicked, and with the aid of a director was cut the whole length of the first incision as far inwards as the spermatic cord. There was considerable difficulty in raising up the lower edge of the tendon of the internal oblique and transversalis, owing to the thickening and induration of the surrounding tissues from the pressure of the tumour; this was finally accomplished by means of the handle of the knife, and a careful division of the layers as they presented themselves, until we arrived at the peritoneum, having cut some of the fleshy fibres of the transversalis; the peritoneum was then carefully and with some difficulty detached from the tumour, which was found to involve a great portion of the external iliac artery; we continued raising the peritoneum till we came to a part of the artery which appeared to be healthy; this was about one-half an inch above the bifurcation of the common iliac. The artery was separated from the vein by the finger nail, and a silk ligature

was passed underneath from within outwards, by means of the admirable aneurismal needle of Professor Gibson. Notwithstanding the precautions that we had taken to have the bowels well evacuated, and the length of our first incision, it was some time before we were able to get a view of the curve of the needle still held under the artery, on account of the projection of the tumour and the protrusion of the abdominal contents. Finally, by means of broad, curved steel spatulas, and drawing forward the artery by means of the aneurismal needle that was underneath, we managed to get a view of the common iliac artery, and the iliac vein underneath, on the side of the sacro-vertebral promontory, with the ureter crossing the artery, and attached to the raised peritoneum. The ligature was without the slightest difficulty passed out of the wound by the watch-spring of the needle, and was tied by the tips of the fingers with a simple double knot; both ends of the ligature were allowed to remain hanging together from the wound. Immediately the pulsation of the tumour ceased, and its volume sensibly diminished. The edges of the wound were brought together by three interrupted sutures and adhesive plaster, and dressed with lint spread with cerate, and retained by two adhesive strips. The patient was removed to his bed, placed on his back, his leg slightly raised by a pillow under the knee, his shoulders raised, his body flexed and inclined towards the affected side. The needle was placed under the artery in seventeen minutes, but thirty minutes more were required before the patient was removed to his bed. The ligature came away on the thirty-fifth day.—*American Journal*.

Hemiplegia from tying the common Carotid Artery.—M. Sedillot applied a ligature to the common carotid to arrest hæmorrhage, in a man who was wounded behind the right branch of the lower jaw. Complete hemiplegia of the left side of the body, and of the right side of the face, followed, and the patient lost his intelligence so far that he could scarcely comprehend questions put to him. He died nine days after the application of the ligature, and the post-mortem examination showed that the hemiplegic symptoms had resulted from the right side of the brain having been deprived of its due proportion of arterial blood.—*Gazette Médicale*; and *American Journal of the Medical Sciences*.

Neuralgia of the Urethra.—A woman, thirty-two years of age, mother of four children, suffered for eight months from pain at the lower part of the abdomen, with scalding on making water, and a constant sense of titillation at the orifice of the meatus. The pain became so severe as to prevent the patient from sleeping. The bladder was examined, but no sign of calculus found. Various remedies were tried without effect. Two issues, with the Vienna caustic, were now made over the hypogastric region. The patient had tepid baths, containing two drachms of the sulphate of potass, and some pills composed of hyosciamus and extract of lettuce. This mode of treatment effected a cure.—*Bordeaux Journal*.

Effects of Menstruation on the Secretion of Milk.—M. Raciborski read a memoir on this subject. His conclusions were drawn from seven cases of women who continued to menstruate during the whole or greater part of the period of suckling; they are—

1. That, contrary to the generally received opinion, the milk of nurses who menstruate during the period of suckling does not differ in any appreciable manner from that of nurses who do not menstruate.

2. The only difference worth noting is, that it contains less cream—a fact on which the blueish colour of the milk from some women depends.

That the inconveniences of allowing a woman to nurse during menstruation, has been greatly exaggerated, and that a nurse should never be rejected on this account alone.—*Academy of Medicine, Paris. May 31, 1843.—Prov. Med. Journal.*

On the Odour of Musk, by Anton Wimmer.—The author was induced, by a remark in *Geiger's Handbuch der Pharmacie*, “that golden sulphuret of antimony destroyed the odour of musk, and that the kermes mineral changed its odour to that of garlic,” to investigate the subject more closely, and although he corroborates the statement, he does so not without some limitation. He was not able to detect the garlic odour mentioned on addition of kermes mineral to musk, although its odour was certainly modified by it. By adding spirit of ammonia, he found that the odour was in both instances reproduced in its full vigour and integrity; he consequently concludes that the golden sulphuret of antimony does not destroy the odour of the musk, but merely forms a new combination with it, in which the odour is suppressed. Caustic potash, and concentrated phosphoric acid, added to this odourless mixture of musk, with a preparation of antimony, produced a peculiar musty odour, which was readily converted into the pure musk odour, on addition of caustic ammonia. From these data, Wimmer infers that the odour of musk is dependent on a *peculiar weak organic acid in combination with ammonia*, that this acid has separately a musty odour, an hypothesis by no means inconsistent with the generally adopted opinion that the odorous principle is developed by a peculiar putrefaction of the substance of the musk grains, for in this process the acid and the ammonia may both be formed. As regards the action of the golden sulphuret, he believes that the sulphur, which stands in an electro-negative relation to the acid and the ammonia, enters into a peculiar chemical combination with the musk, which is readily disturbed. In conclusion, he proposes prescribing musk in this combination with antimony, for those who are averse to its odour.—*Repert. für die Pharm., Band. xxix. Heft 1, page 51.—Pharmaceutical Journal.*

On a new Test for Corrosive Sublimate.—In a letter to the Editor of the Medical Gazette, Dr. Frampton has proposed a new test for corrosive sublimate. He says, “it is now upwards of two years, since, reflecting on the strong affinity of metallic silver both for metallic

mercury and for chlorine, I triturated a grain of corrosive sublimate with several grains of pure metallic silver in powder, as it is procured by precipitation with copper from a solution of the nitrate, and in a dry state; and I was soon encouraged by the blackened appearance of the mixture to believe that decomposition of the bichloride had taken place in some degree at least; and that this decomposition was complete became evident, when, upon placing the powder in the bulb of a small tube (such as is used in reducing arsenic), I obtained a distinct ring of metallic mercurial globules in the neck of the tube. Since that time, in obtaining metallic mercury from corrosive sublimate, I have always used silver, which I have not known to fail in producing its reduction, and have found much more convenient and manageable than the potassa fusa, commonly employed; this last not being easily pulverized, and attracting moisture to an inconvenient extent very rapidly. This objection, however, scarcely applies to the use of the bicarbonate of soda or potass.

"I have subsequently endeavoured to ascertain whether metallic silver possessed the same power, and to what extent, over corrosive sublimate in solution; and in successive trials I have been able to obtain distinct, nay abundant, metallic globules from the amalgam formed by boiling metallic silver in a solution containing one grain of corrosive sublimate in four ounces of distilled water, and even in a solution of half that strength, i. e. of one grain to eight ounces. My time does not allow me to make numerous comparative experiments, but I am disposed to believe that silver acts slowly, or not at all, on solutions of corrosive sublimate at the ordinary temperature.

"I next tried this method of experimenting on organic mixtures; and having added one grain of corrosive sublimate to four ounces of tea, made with sugar and milk, I boiled the liquor with the powdered silver, and after allowing time for subsidence, the fluid was poured off. Liquor potassæ was boiled for some time upon the metal, to dissolve organic matter, and liquor ammoniæ afterwards added to the sediment, in order to dissolve the chloride of silver. This was also poured off, and the sediment having been washed and thoroughly dried, was placed in a tube as before, and metallic mercury obtained in abundance.

"Two other experiments have also given very satisfactory results, in one of which one grain of corrosive sublimate, dissolved in a little distilled water, was mixed with a gelatinous fluid, made by diffusing 3j. by weight of the patent gelatine of the shops in 4 oz. of New River water. In the other, one grain of the same substance in powder was added to 5 oz. of a sanguineous fluid, which had been obtained five days previously, by tapping, from the head of a hydrocephalous infant. The only modification in these cases was, that the mixture was acidulated with hydrochloric acid before adding the silver; this proceeding having been suggested by M. Reinsch's plan of testing for arsenic. It is necessary to moisten the silver by agitating it with a little distilled water in a tube, before adding to the suspected mixture; but, in the cases detailed, the metallic sediment has been very easily obtained, subsiding rapidly, and the results have been very satisfactory."

Death from a large Dose of Sulphate of Quinine.—A man 26 years of age, No. 11, Saint Madeline's ward, was affected with acute articular rheumatism; he had been shortly before treated in the Hôtel Dieu for small-pox, and having probably left the hospital too soon was exposed to cold, and contracted acute rheumatism, in consequence of which he was admitted under the care of M. Recamier on the 27th of November; he then laboured under general fever without any complication; the heart, lungs, and head were not implicated; there was derangement of intelligence; no headach; both wrists were very painful and swollen, but the skin was not red; the knees were also painful, but in a less degree; no pain in the hips. The diagnosis was thus stated. *Acute rheumatism of the joints, with fever of medium intensity*; as to the prognosis it was stated that they would probably be of tolerably long duration; that complications were to be expected, such as inflammation of the serous membranes of the thorax, though nothing of the kind yet existed.

M. Recamier having just witnessed an admirable cure effected in an analogous case, by the administration of sulphate of quinine, to a lady, in private practice, resolved to employ the same treatment in this case. He prescribed the first day three grammes ($56\frac{1}{2}$ grains) in twelve papers, one to be taken every hour. No bad effect resulted.

The next day the pains were diminished in the lower extremities, but were more severe in the wrists. On a careful examination of the heart, no bruit de soufflet could be detected, but its pulsations were not quite so distinctly clear as natural.

The second day five grammes (77 grs.) of sulphate of quinine were prescribed; to be taken in the same manner as the first day. The patient had only taken $3\frac{1}{2}$ grammes when he was suddenly attacked with extreme agitation, followed by furious delirium, and death occurred in a few hours.

On dissection the signs of a general and most intense meningitis were discovered; considerable sanguineous effusion of the meninges; penetrated vascularity of the surface of the brain, of which some points, more intensely inflamed, presented a commencement of softening; the quantity of serum in the ventricles was natural.

While the foregoing case was in progress, a similar but less disastrous one occurred under the care of M. Husson, in the person of a patient affected with symptoms of rheumatism, closely resembling the above mentioned. Six grammes of sulphate of quinine were administered; after the ingestion of the last dose, the patient fell into a state of prostration, rapidly followed by extreme agitation and delirium, to which soon succeeded excessive debility and complete immobility. The pains, however, had disappeared.—*Gaz. des Hopitaux*, Dec. 8, 1842.

Statistics of Bethlem Hospital, with Remarks on Insanity, by John Webster, M. D.—In this paper the author brought before the Society a few statistical tables compiled from the registers of Bethlem Hospital, accompanied by a synopsis of seventy dissections recently performed at that institution.

According to these tables, it appears that 4404 curable patients of both sexes were admitted during the last twenty years, of whom 1782 were males, and 2622 were females—thus giving 47 per cent. more women than men. During the same period, 1446 female patients were discharged cured, that is, $55\frac{1}{7}$ per cent. on the admissions; whilst only 823 male patients left the hospital convalescent, or $46\frac{1}{5}$ per cent. On the other hand, the number of deaths in both sexes, although exactly equal, or 112 of each, yet calculated according to their respective admissions, the rate among the male patients was $6\frac{1}{4}$ per cent. and only $4\frac{1}{4}$ per cent. among the females. Similar results were likewise found to prevail among the incurable lunatics of both sexes. The author therefore concludes that insanity is not only more common among women than men, but also a more curable disease; so that, *cæteris paribus*, the prognosis may be considered as more favourable in female than male patients. The diminished rate of mortality, and the greater proportion of recoveries are also clearly shewn by the records of the institution; since it appears that during the three years ending the 21st Dec. 1752, the proportion of patients discharged cured was only $31\frac{1}{4}$ per cent. on the total admissions; whilst for the three years ending Dec. 31, 1842, the cures amounted to nearly 55 per cent. The ratio of deaths, also, during the former period, was as high as $25\frac{1}{2}$ per cent.—but only $5\frac{5}{8}$ during the last named three years—that is, about $\frac{1}{5}$ th the amount reported nearly a century ago.—*Lon. Med. Gazette*, July 7, 1843.

Operations for Fissure of the soft and hard Palate. (Palatoplastie.) By J. Mason Warren, M. D.—The form of operation which I have practised will be best illustrated by the relation of the first case in which it was put into execution.

The patient was a young man, 25 years old, with a congenital fissure of the soft and hard palate, the bones being separated quite up to the alveolar processes, with a deviation to the left side. On looking into the mouth, the whole posterior fauces were exposed, with the openings of the eustachian tubes and the bottom of the nasal cavity of the left side distinctly visible. The speech of the patient was rendered so indistinct, by this misfortune, that it was with the greatest difficulty that he could make himself understood. Deglutition had always been imperfectly performed, liquids, particularly, being swallowed with much difficulty, and often regurgitated through the nose. At the first glance the soft parts were scarcely preceptible, being almost concealed in the sides of the throat from the action of the muscles. On being seized by a forceps they could be partially drawn out, though with great resistance. So far as any of the old methods were applicable to the relief of this extensive fissure, the patient was beyond surgical aid. I determined, however, to put in practice the operation which had before appeared to me practicable.

The patient was placed in a strong light, his mouth widely opened, and the head well supported by an assistant; with a long, double-edged knife, curved on its flat side, I now carefully dissected up the

membrane covering the hard palate, pursuing the dissection quite back to the root of the alveolar processes. By this process, which was not effected without considerable difficulty, the membrane seemed gradually to unfold itself, and could be easily drawn across the very wide fissure. A narrow slip was now removed from the edges of the soft palate, and with it the two halves of the uvula. By this means a continuous flap was obtained, beginning at the roots of the teeth and extending backwards to the edges of the velum palati. Finally, six sutures were introduced, on tying of which the whole fissure was obliterated. The patient was directed to maintain the most perfect quiet, and to abstain from making the slightest efforts to swallow even the mucus which collected in the throat, which was to be carefully sponged out as occasion required.

The following day he was doing well. He complained of some pain, or rather a sensation of excessive emptiness of the bowels, which was relieved by the use of a hot spirituous fomentation. On the third day, a slight hacking cough commenced, owing to the collection of thick ropy mucus in the throat and air-passages. The cough was temporarily relieved by an injection of a pint of oat-meal gruel into the rectum; during the night, however, it again increased so much as to tear away the upper and lower ligatures. I now allowed him to take liquid nourishment, which at once quieted the irritation in the throat. The other four ligatures were removed on the following days, the last been left until the sixth after the operation. This patient returned home into the country at the end of three weeks, a firm fleshy palate being formed behind, and half the fissure in the bony palate obliterated.

In the following spring I again operated on the remaining fissure in the hard palate, and succeeded in closing about half the extent of it, the tissues yielding with some difficulty, owing to the inflammation caused by the former operation. The small aperture which remained I directed to be closed by a gold plate. His speech was very much improved at once as well as the powers of deglutition, and he will, no doubt, ultimately, as the soft parts become more flexible, to a great degree recover the natural intonations of the voice.

Since performing this operation, I have had occasion to repeat it in thirteen different cases, which with one exception have terminated successfully, either in the closure of the whole fissure, or of both hard and soft palate, or so far that the aperture which remained in the bones could be easily closed by an obturator fitted to the adjoining teeth. Some of these cases have been exceedingly interesting.—*The New England Quarterly Journal of Medicine and Surgery*, April, 1843.

Cases of acute Splenitis, by Professor Henderson.—Ann Walker, aged 20, unmarried, was admitted into the Infirmary on the 16th of February, affected with febrile and catarrho-rheumatic symptoms of fourteen days' duration only, though she had been subject to pains of the knees and shoulders for three months previously. Her recent illness had been ushered in by shiverings, partial headach, and general

soreness of the body and limbs. Latterly, cough, attended by moderate mucous expectoration, came on, and all these symptoms, except the rigors, were still in existence at the date of her admission. Her pulse was 120 at the same time; her tongue furred; bowels open; and catamenia present. The treatment consisted of shaving the head, a small blood-letting from the arm, and a solution of the acetate of ammonia; and by these means she improved so much, as to have been reported free from fever, and convalescent on the 23d.

On the 25th it was reported, that she had had a restless night, with shivering, and complained of headach, pain of the limbs, and thirst, and had a hot skin: pulse beating 125 in the minute; dry tongue; and confined bowels. Some cathartic medicine was ordered, and afterwards four grain doses of Dover's powder, and one-half grain of calomel, three times a day. No further occasion for special notice occurred till the 1st of March, on which day the following report was entered in the journal.

The percussion-sound on the left half of the back becomes dull at the tenth rib, and continues so for five inches downwards; on the lateral part of the left hypochondrium, the percussion-sound becomes dull on the ninth rib, and extends of the same character down to the margin of the hypochondrium, and round to the front as far as the epigastrium. In the left side of the epigastrium, the anterior wedge-shaped margin of a tumour that projects from within the hypochondrium can be felt, and can be pushed forward considerably by pressure made with the fingers in the lumbar region below the twelfth rib. Much tenderness is experienced when pressure is made on this swelling, or in the direction of the hypochondrium laterally or posteriorly. Full inspiration, too, produces pain in the same situation. She has no pain in the left shoulder, but uneasiness, apparently rheumatic, in the right. Has had occasional vomiting since the 26th, not specially connected with the reception of food. She has perspired frequently since the powders were given, and her bowels have since been rather loose, without the use of any other medicine; had three stools in the last 24 hours; skin hot and moist; pulse, 116, soft and of moderate size and force; tongue moist and furred in the middle. It appears that she had some pain in the hypochondrium on the 26th, although she did not mention it, as well as in the limbs and right hypochondrium. She dates her present symptoms from exposure to cold on the 24th, as she had then got out of bed when in a state of perspiration, and had felt immediately chilled by a draught of cold air from an open door near which she lay.

Admovtr. hirud. xx. part. dolent. lateris sinistri. Omit. pulveres

March 2nd. She felt greatly relieved by the leeching, and bears pressure to-day with little uneasiness in the region of the spleen and epigastrium. The tumour in the left side of the epigastrium can still be felt, but is less prominent. Much vomiting during the night; bowels moved four times without medicine; tongue moist and furred; skin hot; pulse 104, soft.

Admoveantur hirud. x. part. dolen.

3rd. Pulse 102, soft; she is perspiring freely. The anterior margin of the tumour can barely be felt in the left side of the epigastrium. The dull percussion-sound begins on the left back at the eleventh rib, and extends downwards three inches and a half; on the lateral region of the hypochondrium it begins at the ninth rib, and extends downwards about two and a half inches, to the anterior extremity of the eleventh rib. She can now take a full inspiration without pain; the descent of the diaphragm pushes the tumour more towards the abdomen. Tongue clean; two stools without medicine; no vomiting.

4th. Pulse 94. No distinct trace of the tumour can be detected by the fingers. The percussion-sound continues nearly as yesterday. Skin cool; two stools without medicine.

5th. The pain in the left hypochondrium has returned to a considerable degree, and the tumour can again be felt projecting into the epigastrium. The percussion-sound is again dull, nearly as high as the tenth rib posteriorly, and from that elevation for four inches downwards. The antero-posterior extent of the dulness, reckoning from three fingers' breadths to the left of the spine, and as far forward as the epigastrium, is about seven inches. The back is pretty thickly covered with a lichenoid eruption, which has considerable itchiness, and has been present for two nights past. Pulse 108, quick, soft and small; cannot fully inspire without pain in the region of the spleen; no stools.

Adm. hirud. xviii. lat. sinistr. et

R. Sulph. Magn. ζ i.

Tart. Potass. et Sodæ, ζ iss.

Aquæ Font. ζ xvi. Misce.

Two ounces every four hours.

6th. The leeches have bled well, and the hypochondrium is much relieved. No tumour can be felt in the epigastrium, and the stomachal resonance extends an inch to the left of the anterior margin of the hypochondrium. Behind, the dulness begins on the eleventh rib, and extends downwards three inches. No stool, though all the medicine had been taken, until an enema was given this morning; pulse 116, small and soft; considerable tenderness continues in the hypochondrium; no vomiting; the eruption is still observable.

R. Sulph. Magn. ζ ii.

Tart. Antim. gr. i.

Aquæ, ζ xviii. Misce.

Four ounces every two hours until the bowels are freely moved.

Applic. vesicatorium. part. dol.

7th. Pulse 116, quick and small; has acute tenderness in the region of the spleen, and cannot inspire fully without pain; the blister is still on the side, and has not produced any effect; bowels freely and repeatedly moved. Says that she has never had chilly feelings since the 25th ult., and when seen in the morning and late in the evening, has always been in a febrile state, and otherwise, as during the day. Has sweated some at various times of the day and night, and chiefly on falling asleep.—Continue purgatives every two hours,

till the bowels are four times moved.—*London and Edinburgh Monthly Journal of Medical Science*, July, 1843.

Two Cases of strangulated Hernia, followed by artificial Anus, by William Hay, jun., Esq., Surgeon to the Leeds General Infirmary.—CASE I.—Anne Wood, aged 66 years, was admitted into the Leeds General Infirmary on the 11th of August, 1841, at three, P. M., on account of a large femoral hernia of the right side, which had been strangulated forty hours. Having tried the usual means of reduction without success, I proceeded to the operation at half-past seven, P. M. In compliance with the suggestion of my colleague, Mr. Teale, who assisted me, I divided the stricture without opening the sac, and then again attempted to reduce the hernia, but did not succeed in doing so, nor was I sensible of any diminution in the bulk of the tumour. I, therefore, of course, opened the sac, in which I found a considerable mass of omentum, but *no intestine*. I concluded that the symptoms had been produced by the strangulation of the omentum. A considerable portion of it, which appeared to have been long protruded, and was indurated, was removed, and the wound closed. On the day but one following, in consequence of some appearance of inflammation, the dressings were removed, and, as the wound showed no disposition to unite, the stitches were cut out, and a poultice applied. The wound continued to present a sloughy appearance until the sixth day, when a copious discharge of thin feculent matter took place from it. For some days the whole of the fæces were discharged through the artificial anus, and afterwards, partly through it and partly through the natural passage, until September 3, when the artificial anus was closed (seventeen days after its formation).

Sept. 24. The wound was healed, and the cicatrix sufficiently firm to bear the pressure of a truss, when the patient was discharged cured.

CASE II.—Elizabeth Smith, aged 61 years, was admitted on the afternoon of Wednesday, the 1st of March, 1843, with a small femoral hernia of the right side, which had been strangulated since eight o'clock in the morning of the previous Monday. She stated that she had had hernia for twenty-five years, but had never wore a truss, and had always been able to reduce it until the Monday morning. At the time of admission the extremities were cold, pulse very feeble, pain in the abdomen severe, vomiting frequent, and slightly stercoraceous. The tumour was very tender, and the integuments covering it somewhat firm and adherent, from effusion into the subcutaneous cellular structure. The operation was immediately decided upon, and was performed at eight, P. M., sixty hours after the strangulation took place. The sac contained a small knuckle of intestine of a dark colour, and approaching to a state of gangrene. I hesitated as to the propriety of returning it into the abdomen, but, as I did not feel certain that it was past recovery, I decided upon doing so, leaving it as near as possible to the opening from which it had protruded, and leaving the wound open in order to avoid the danger of extravasation into the cavity of the abdomen, in

the event of its sloughing. After the operation an opiate was administered, followed by an effervescing saline mixture, with magnesia. She passed a tolerably good night, and the next morning the pulse was 90, and stronger, but there had been no evacuation from the bowels. The vomiting returned during the day, and continued at intervals until the 5th. The abdomen was tympanitic, and there was no relief from the bowels during this period; but on the 5th she had two free evacuations per anum, and a slight fæcal discharge from the wound. The vomiting then ceased, and the swelling of the abdomen subsided. On the 6th an artificial anus was fully formed, and the whole of the fæces were discharged through it.

13th. The slough of intestine came away this morning; she had a copious stool per anum in the afternoon.

17th. Complains of pain in the abdomen, which is distended, the bowels not having acted sufficiently. A dose of castor oil was given.

18th. Has had a copious discharge of fæces per anum, followed by complete relief. The discharge of fæces from the groin has nearly ceased.

24th. No discharge of fæces from the groin.

From this time the whole of the motions were passed per anum, but the wound was not sufficiently healed to enable her to bear the pressure of a truss until April 24, when she was discharged cured.—*Provincial Medical Journal*, June 24, 1843.

Pilula Ferri Composita.—Several methods were proposed some time ago, by members of the society, for preparing this pill in such a manner as to preserve the carbonate of iron undecomposed, and to insure the uniform consistence of the mass.* Some of the plans recommended, were, to a certain extent, deviations from the formula of the College. We have found, as the result of experiment, that the mass can be made according to the directions of the Pharmacopœia, and free from any of the objections which have been pointed out, by an attention to the following particulars:

Dissolve the sulphate of iron, finely powdered, in the treacle with a moderate heat, and add the carbonate of soda, stirring constantly until the effervescence has entirely ceased and the mixture has become cool; then add the myrrh gradually, and incorporate the mass. As a little evaporation takes place at the commencement of the process, a small excess of treacle is requisite to supply the deficiency. This mass retains its colour and consistence remarkably well.—*Pharmaceutical Journal*, July 1, 1843.

Cases of Traumatic Tetanus successfully treated with Tartar Emetic, by J. Brown, Esq.—CASE I.—Ramjaun Oola, a poor villager, a man apparently about fifty years of age, and weakly constitution, was admitted into hospital on the 22nd of December, 1836, with a

* See *Pharmaceutical Journal*, vol. i. pp. 172, 288, and vol. ii. p. 9.

very slight wound over each parietal bone, inflicted, I believe, by a stick, and which originally were not above an inch in length each, and nearly healed when admitted. Some simple dressing was ordered to them.

On the morning of the 24th of December, I observed that the man could speak but very indistinctly. The muscles of the neck and face were very rigid, and the lower jaw secured in close application to the upper; a heavy and anxious look about him; pulse feeble; skin natural; bowels regular. Ordered him half a grain of the tartarised antimony in solution, with thin sago every half hour; to be intermitted as occasion may require.

P. M. About one o'clock experienced a little nausea; no change. Continue medicine.

25th. As yesterday; no evacuation by stool. Infusion of senna, two ounces; to continue the antimony.

26th. Pretty much as yesterday. To continue his medicine, the antimony.

P. M. Evidently better this evening; muscles not so rigid.

27th. Mouth still closed, otherwise as yesterday evening. To continue the medicine.

28th. No further change. To continue the medicine.

29th. Has experienced a good deal of nausea; bowels confined. Infusion of senna, two ounces; the antimony to be given every three hours.

30th. Improving; muscles still more relaxed; able to work the lower jaw, and put out his tongue. Continue medicine.

The tartarised antimony continued for a few days longer beyond the date of last report; the man daily getting better, he was discharged on the 18th of January, 1837, quite well.

CASE II.—Jebun Sheik, a strong and stout man, about thirty years of age, a villager, was sent to me on the 26th of December, 1837, with a severe wound from (I believe) a sword, on the outer side of the left leg, near the ankle joint, and penetrating to the bone. The wound was in bad condition, as it had been neglected for several days. About the beginning of February the wound was nearly healed, and the man became exceedingly anxious to return home. I persuaded him, however, to stay and wait till it should be quite healed. On the evening of the 9th of February the man was more anxious than ever to go away, and begged that I would consent to his dismissal from hospital. I quieted him with the assurance he should go in a day or two. On the morning of the 19th, I observed he appeared in great anxiety, and I questioned him why he should be so. He then told me that for about six days he has experienced a stiffness about the muscles of the neck and face, and a difficulty in using the lower jaw, together with a sensation of stiffness from the wound upwards, and along the spine of the back, which symptoms, he took notice, were gradually on the increase; and, therefore, he was anxious to go home, for he thought they must have originated from confinement to the hospital. Had passed a very restless night. I thought it best to explain to the man

that the symptoms which then appeared took their rise from the wound he had received; if he went home he would be out of the way of all help; these symptoms would increase, and most likely terminate in his death. He consented to stay, and I determined on giving the oil of turpentine a fair trial, as I had, in the course of reading, met with a case where it seemed to have the effect of a specific. I prescribed, therefore, sixteen drops of the oil every two hours; sago diet.

Feb. 10th, five, P. M. Said he thought he felt better; appeared less anxious; pulse full, and about 70; skin natural. Ordered the turpentine every four hours.

11th. Slept a little; symptoms somewhat moderated. Medicine continued.

P. M. Much the same as in the morning; bowels rather confined. Ordered him three grains of calomel, with seven grains of aloes; castor oil.

12th. No sleep last night; symptoms all aggravated; appears in great alarm; difficulty in opening his mouth and swallowing much increased; constriction about the fore-part of the throat severe; complains of great pain and stiffness in back and along left leg; pulse moderate; skin natural; anxious to go home. I considered it right now to drop the turpentine, and resort to the tartarised antimony, having found it to answer so well in a similar case under my care during the month of December, 1836. I, therefore, directed that a quarter of a grain of tartarised antimony should be given every quarter of an hour, till nausea be produced, and then that the frequency of its exhibition should be diminished a little.

P. M. Appears much better this morning; symptoms greatly moderated; neck not so stiff; can use his jaw better, but is not able to open his mouth beyond the extent of a quarter of an inch; still feels the stiffness in his back and leg; slept a little during the day; bowels opened four times; takes sago and milk for food; pulse 84, and pretty full. Has taken seven grains of the tartarised antimony; ordered it to be continued every half hour.

13th. Slept a little during the night, and was pretty free from pain till towards morning; complains now of tightness across the chest, and pain shooting from the ensiform cartilage to the back bone; experiences occasionally pretty severe contractions of the muscles situated along the back and on each side; throat not worse; pulse 88, and hard. Six grains of the antimony taken during the night; nausea was produced several times; water does not flow freely.

P. M. No pain at present about back or neck; the office of deglutition performed with more ease; occasionally a twitch of pain in the leg, and then it shoots upwards to the back and chest; three stools. Has taken six grains of the antimony.

14th. Rested better last night; feels pretty comfortable now; pulse 100; passes water freely. Took five grains of the antimony during last night.

P. M. Has been easy all day; feels inclined to eat something

more; says he took a little dhol and rice for dinner; pulse 102; two stools. Has taken six grains of the antimony.

15th. Rested well, and was quite free from pain till towards morning, when he begun to experience a sense of tightness up the leg and side; no uneasiness about the chest; pulse as yesterday; no stool. Has taken six grains of the antimony.

P. M. Continues much as usual; one evacuation. Six grains of the antimony administered.

16th. Rested well till the morning, when he experienced the same sensation as yesterday. Took six grains of the antimony during the night; a small sinus discovered with an opening into the sore, which was cut and laid open.

P. M. Has been quite easy all day; no unpleasant sensations from the sore; one stool. Has used six grains of the antimony.

17th. Slept well till three this morning, when he had a couple of slight twitches of pain up the leg; one motion; water does not flow so freely. Has taken the usual quantity of antimony; castor oil, six drachms.

P. M. Four stools; has experienced rather more uneasiness about the leg to-day; water flows freely. Taken six grains of the antimony.

18th. Rested well last night; experienced a little uneasiness from twitches of pain arising from the sore, between the hours of twelve and two; pulse 80, rather small. Has taken his antimony.

P. M. Has been very comfortable all day. Taken the antimony as usual.

19th. Rested well; feels much better. Continues the medicine.

P. M. Continues improving; able to open his mouth to considerably greater extent than heretofore. Has taken the same quantity of antimony.

20th. Still better.

March 3rd. Has been quite free from all complaint since last report, taking his medicine as usual. The antimony omitted this morning.

Discharged on the 12th cured.—*Bengal Transactions*.—*Provincial Medical Journal*, July 8, 1843.

Luxation of the Patella on its Axis, by Dr. P. Gazsan, of Pittsburg.—James, aged twenty-one years, son of Judge Porter, of Pittsburg, was thrown while wrestling, and immediately found himself unable to rise.

On seeing him about an hour after the accident, I found the patella of the right leg discolated on its axis, i. e. it was lying on its edge, presenting the posterior face outward, and the anterior face inward, the inner edge resting in the groove between the condyles of the femur.

Flexing the thigh on the pelvis, and straightening the leg, I endeavoured to replace the bone by pressing its edges in opposite directions, but failing (after repeated trials), I requested that the patient

should be brought to town (the accident happened three miles out of the city), and additional advice procured.

At about twelve o'clock the patient was brought to his father's house, where I met Dr. Addison. After repeated unsuccessful attempts at reduction, it was thought well to lessen the tension of the joint by dividing the ligament of the patella. This I did, by introducing beneath the skin a narrow-bladed knife, and cutting the ligament close to the tubercle of the tibia. Again we attempted reduction, but failed. The patella could be moved on its edge more freely than before the cutting, but resisted all our efforts to replace it.

Dr. Speer was now joined to the consultation, and in accordance with his suggestion, the patient was placed erect, a vein opened, and the blood allowed to flow until the approach of syncope, when the efforts at reduction were renewed, but although the patella could be moved on its edge, it could not be lifted out of the groove in which it rested. It was now agreed to let the patient rest for a few hours.

The thigh was now strongly flexed on the pelvis, and the heel elevated. Then the leg was flexed steadily and forcibly on the thigh, and suddenly straightened. At the moment of straightening the leg, I pressed very strongly against the lower edge of the patella from without, with the head of a door-key well wrapped, while Dr. Addison pressed with both thumbs against the upper edge of the bone towards the external condyle. On the fourth trial this manœuvre succeeded, the bone springing into its place with a snap. A cushioned splint was placed behind the knee and secured by a bandage; an evaporating lotion was used, and the patient kept at rest. Recovery was uninterrupted, and the young man has now perfect command of the limb. —*American Journal of Medical Science.*—*Ibid.*

New Hernia Knife.—Dr. T. Cambell Stewart, has described in a late number of the "American Journal," a new form of knife for the purpose of dividing the stricture in cases of strangulated hernia, and said not to be open to the sources of danger attending upon the employment of the instruments commonly in use; he particularly advocates its use in cases of inguinal and crural hernia. The knife consists of a small convex blade concealed in a hollow canula, presenting at half an inch from its extremity a notch of about two lines in length, and one line deep, for receiving the membranes which constitute the structure; this opening is closed at the top by a steel blade, presenting at one end a small shoulder, and at the other a wire spring concealed in the handle. The knife, small and convex, is strengthened by a shoulder on either side, projecting a little higher than itself, and protecting its edge from contact with the canula.

The instrument is directed to be used in the following manner:

So soon as the sac constituting the hernia shall have been laid bare and opened, the canula containing the knife is to be introduced flat, between the intestine and the stricture; so soon as it has entered, the instrument is turned, so as to bring its upper surface in contact with the part to be divided, and then pushing gently and cautiously

onwards; after penetrating a short distance, its further progress is arrested by a small shoulder, the blade of which, however, being terminated by the spring, yields to continued pressure, so far, and so far only as may be necessary to admit the constricting membranes. These being now engaged in the excavation, the knife is made to move forwards and backwards by pushing and withdrawing a button placed beneath the handle, with the index finger of the right hand, so as to incise as much of the membranes as may be thought necessary to permit the reduction of the hernia. The structure may be thus divided, above, below, or on either side of the intestine.—*Ibid.*

Wound of the Aorta and Pericardium.—The following case is interesting in a medico-legal point of view:—A Spanish refugee was struck by one of his companions with a knife in the back. The blade broke at a little distance from the skin. The patient walked to the hospital, where he died two hours after. At the *post-mortem* examination, it was found that the knife had penetrated between the seventh and eighth dorsal spines, that it had cut or broken a portion of one of these processes, crossed obliquely the vertebral canal, traversed the body of the vertebra from below, and a little to the right side of the centre, and then wounded the aorta below its arch. The pericardium was divided to the extent of five millimetres; it contained three grammes of blood. The pleuræ, but more especially the left, were filled with a considerable quantity. The spinal cord was not affected.—*Bull. de Thér.*, June, 1842.

M. Chomel on the Diagnosis of Pneumonia—In one of his recent clinical lectures at the Hôtel Dieu, M. Chomel made the following remarks on the importance of shivering as a diagnostic sign of thoracic inflammation, in commenting upon a case of pneumonia that was in the wards at the time:

“I took much pains in questioning this patient, to ascertain whether she had experienced any chill, before the commencement of the attack; and her reply was always in the negative. This circumstance appears to me of importance; and it is therefore designedly that I now call your attention to the subject, seeing that it is the professed opinion of many physicians that pneumonia, like articular rheumatism, may generally be traced to the influence of damp and cold. The results, however, of my own experience, as well as of that of many others whom I know, are quite opposed to this opinion. No doubt it often happens that pneumonic patients will be found to have been chilled some time before the attack came on; but assuredly the chill is not the only, nor even the principal, cause of the disease. If we inquire into the particulars of a case, we shall generally find that there was a predisposition to the malady present in the system at the time, and that the chill only accelerated the development of the mischief.

It was merely the occasion, so to speak, of the explosion of a pre-existing morbid state; just in the same manner as a simple indigestion may be the exciting cause of a gastric inflammation in a person, in whom there is a strong disposition to this disease.

“ But the same remark does not hold true of shivering when this occurs at the commencement of a disease. In my opinion it is an almost invariable sign of pulmonary inflammation. Whenever, therefore, this symptom is or has been present, the physician will do wisely to direct his attention to the chest; and very generally, at least according to my experience, he will find that an inflammatory process has been set up in the lungs—unless indeed some well-marked symptoms clearly point to another organ as the seat of suffering. I do not deny, as a matter of course, that an attack of peritonitis, enteritis, &c. is sometimes ushered in with shivering; all that I mean to assert is, that this symptom is infinitely more common as a precursor of pneumonia than of any other inflammation. Hence in practice, whenever any of my patients has a well marked shivering fit, even although other symptoms indicative of disease elsewhere be strongly marked, I at once suspect that the lungs are more or less seriously affected. On very many occasions indeed, this symptom alone has sufficed to suggest to me the right diagnosis, while other medical men, who have seen the case at the same time, have formed a very different opinion.

“ There is another character which equally deserves the attentive consideration of the physician—and that is the pain in the side. In pleuro-pneumonia the pain is generally seated in the region of the mamma, although the affected part of the lung does not correspond to this point, or perhaps extends much beyond it. It has been suggested, in the way of explanation, that there is a greater degree of friction between the pulmonic and the costal pleuræ at this point than at any other, and that this may be the cause of the phenomenon in question. But if such were the case, the pain should surely not be limited to so circumscribed a spot, but should extend over all the surface where this greater friction is experienced; and we might expect, moreover, that it should change its locality—which certainly does not hold true. No satisfactory explanation has hitherto been offered of this symptom, and we must therefore confess our ignorance upon the point.”—*Gazette des Hôpitaux*.

A simple Means to prevent or stop Nervous Coughing.—There is a curious and rather interesting paper with the above title in a number of the French Medical Gazette for February, and from it we have extracted the following passages. M. Diday, the author, makes a few prefatory remarks on the power which a mere strong effort of the will often gives to resist the impulse of a strong sensation (*besoin* the French would say), like that of sneezing or coughing; and he goes so far as to assert, that “ it is always possible to prevent a fit of either by an energetic and sustained effort of the will, *if this be done from the very commencement*.” In old established coughs, as a matter of course, such an attempt is quite inadmissible, at least with any reasonable hopes of success. Whenever, indeed, the cough depends upon the presence of any matter to be expectorated, it is obvious that the effect cannot be checked as long as the cause remains. It is therefore almost exclusively to coughs depending upon nervous irritation that the following remarks are intended to apply.

The attempt also must be made before the annoyance has got, as it were, root in, or hold of, the system. At first, it is especially necessary that the patient acquire the habit of drawing in his breath slowly and not too deeply, and that he should avoid all hurried and irregular inspirations.

That most people have it in their power to arrest, at least to a certain extent, the frequent recurrence of fits of coughing and sneezing is obvious from the very circumstance that these acts are not unfrequently the effect of mere—we might almost say *wilful*—imitation; as in churches, lecture-rooms, &c.; and we know that, whatever may be acquired by the will, may be as readily checked by it. Dr. Diday tells us that one of the most eminent physicians of La Pitié hospital is in the habit of bawling out, on entering any of the wards, “I will have no coughing during my visit; whoever cannot stop himself, shall be put on low diet;” and true it is that all the patients are wonderfully still as long as his visit lasts. It is an old saying, that very few people know what they can do, until they try; and every one can testify from his own experience, that when the attention is suddenly engaged elsewhere, he ceases to feel a desire to some natural act, as to sneeze, to pass urine, &c., although this desire or *besoin* had been urgent just before.

M. Diday gives the following account of his observations.

“The first idea that occurred to me on this subject was suggested by what I observed to take place during sneezing. It is well known to many people that this act may be very often prevented by rubbing the edge of the eyelids or of the lips, or the tip of the nose, with your finger, when the disposition to sneeze is felt. I have repeatedly advised this expedient to my friends and patients, and it has almost invariably succeeded. In one case in particular, that of a young priest, who had been for some time much annoyed by the almost invariable recurrence of fits of sneezing that were apt to come on during his performance of mass, this simple means afforded a speedy and complete relief. In the performance of certain delicate surgical operations about the face and throat, such as that for hare-lip, fissure of the palate, &c., it is a matter of the greatest consequence that the patient should avoid all movement of the parts in the neighbourhood, and nothing disarranges everything so much as a fit of coughing or sneezing.

Now as the latter of these acts—which by-the-by is nothing else but a cough of the nasal passages and of the back of the throat—may be so easily and effectually controlled in the manner we have just mentioned, we are naturally led to expect the same in the former; and so I have found it to be the case not only in myself, but in several other persons who have tried the experiment under my direction.

By merely rubbing pretty smartly with the point of a finger the edge of the lips or of the eyelids, or the tip of the nose, when the first intimation of the ‘*besoin*’ to cough is felt, the act may often be entirely prevented. When this feeling returns very frequently, it will be found useful to employ the revulsive friction first on one of the parts, and then on the others in quick succession.”

M. Diday says that the object in the rubbing is not to supersede the exercise of an effort of the will, but only to aid and augment its efficacy. He accounts for its effects on the principles of the excito-motory doctrines of Marshall Hall and Müller respecting the nervous system.

The impression made on the extremities of certain branches of the trifacial nerve, acts as a sort of derivative or counter-irritant to the morbid sensibility of the extremities of the glosso-pharyngeal and pneumo-gastric nerves. We often observe the effects of this revulsive action in a somewhat analogous case, that of nausea; for we know that the disposition of the stomach to take on an inverted action may often be checked by rinsing the throat with a mouthful of spirits. If the stomach be not too much overloaded, this simple means will not unfrequently prevent vomiting. Here then is an instance where, by making a peculiar lively impression on certain sensory nerves, a tendency to muscular contraction—or, to use the language of a modern school, an excito-motory action—in another part, more or less removed from it, is prevented and controlled; and yet every one knows that a different kind of impression, that of titillation, made on the same organs, is one of the surest methods of exciting this very sympathetic action. Much, therefore, evidently depends upon the kind or degree of the irritation produced. While gentle tickling promotes, firm rubbing will often serve to check a sympathetic movement in a distant part.—*Gazette Medicale*.

Case of Cesarean Operation, successful both for Mother and Child.—The report of this case is contained in the number of the *Journal de Medicine de Lyon*, for last February. The woman was 35 years of age, exceedingly deformed from rickets, and pregnant with her second child; the first had been extracted by embryotomy. The necessary incisions were made, and the child, and afterwards the placenta, extracted in the course of two or three minutes. The child cried lustily when taken out, and continued to thrive. The mother was threatened with peritonitis, but this fortunately subsided, and the wound was quite healed by the fortieth day after the operation.—*Medico-Chirurgical Review*, July, 1843.

THE
DUBLIN JOURNAL

OF
MEDICAL SCIENCE,

1 NOVEMBER, 1843.

PART I.
ORIGINAL COMMUNICATIONS.

ART. VI.—*On Aneurism of the Aorta.* By JOHN O'BRYEN,
M.D., Physician to St. Peter's Hospital, Bristol.

[Read before the Bristol Medical Society, 1842.]

THE importance and interest which so fatal and insidious a disease as thoracic aneurism avowedly is, ought naturally to command the especial attention of all, both in a diagnostic, therapeutic, and pathological point of view.

Let me then earnestly claim your indulgence while I take a succinct survey of aneurism in general, its causes, its diagnosis, and treatment, and then pass in review the leading features of cases alluded to, more particularly that of Harding. In doing so I shall avoid taking up the time of the Society, by making extracts from, or referring to the many learned works extant on this subject, to which all may have recourse at their pleasure, the mere enumeration of which would occupy a considerable time.

We shall divide aneurism into four species:—1. dilatation, or the enlargement of the whole circumference of an artery;

2. true aneurism, which is a sacculated dilatation of a portion only of the circumference, or of one side of the artery; 3. false aneurism, which is formed by ulceration or rupture of the internal and middle coats, and expansion of the external or cellular into a sac;—it is called primitive, when all the coats are divided, as by a wound; and consecutive, when it is a consequence of ulceration or rupture of the internal or middle coats;—4. mixed aneurism, which is the supervention of false upon true aneurism or upon dilatation. Well marked specimens of each are on the table. For the present we shall confine ourselves to the consideration of true and false aneurism.

True generally arises from an abrupt margin; its neck is in most cases rather narrower than the body of sac; its formation is to be attributed to a loss of elasticity and resistance in the particular part that dilates; and the proofs of its existence, in contradistinction to false aneurism, consist in the possibility of tracing the coats (middle and internal) of the artery throughout the extent of the expansion; also by the existence within the sac of the morbid appearances peculiar to the lining membrane of arteries, as calcareous, steatomatous, cartilaginous deposits, also slight fissures and red spots; another mark of distinction will be found in the fact, that fibrin rarely adheres to the walls of a true aneurism, though it may contain much, generally arising from a pedicle.

Usually the tumours of true aneurism spring from the lateral and anterior sides of the vessel, while the lesser curvature of the cross and the posterior parts are little, if at all, implicated in the disease. It has been known to arrive at the size of a mature foetal head without rupture.

What is meant by false aneurism, its definition fully explains. The experiments of Dr. Jones* seem to prove that consecutive aneurism by rupture never takes place in a healthy artery, for if rupture to a small extent did occur, lymph would be imme-

* Jones on Hæmorrhage.

diately thrown out to strengthen the lacerated part. But the fact, which experience teaches every surgeon ought not to be lost sight of, viz. the derangement of the system produced by living in a confined, unhealthy atmosphere, that of an hospital for instance, will often prevent a wound healing, or an ulcer granulating. What we are in the habit of seeing take place under our eyes may we not suppose actually happened in the case of Harding?—I allude to rupture being the first link in the chain of his disease.

Another general remark worthy of being borne in mind is, that aneurisms of the ascending aorta and cross are at first almost invariably true, though false ones may supervene upon them; while those of the descending aorta are generally false, and the artery opposite the tumour is rarely dilated. Accident is in general the immediate exciting cause of this species of aneurism; although, as shown above, accident might rupture an artery, it would not, as a matter of course, produce aneurism, unless there existed previous disease of the vessel, or such a state of the system, that it could not throw out readily healthy lymph. The almost general cause of true aneurism is loss of elasticity, or power of resistance, produced by inflammatory action, extending to the middle coat.

The pathological effects of thoracic aneurism are such as result either from the compression or destruction of the neighbouring organs. By compression the functions of the lungs, bronchi, heart, arteries, and œsophagus are deranged. Hence we derive the rational and negative means of diagnosis in this fatal affection. By destruction, the bodies of the vertebræ are absorbed, as in Harding's case, thence another negative sign to prove the existence of aneurism, viz. a terebrating, knowing pain in some fixed position, the consequence of irritation by erosion of the spinal nerves; and even this cannot be depended on, as it may be present from other causes than aneurism. I am even now attending such a case.

The size an aneurismal tumour attains generally depends on

the nature of the surrounding parts, and is much determined by their capability of extension, and this is almost in direct ratio to the quantity of cellular membrane they contain. Hence it is, that when the disease is situated near the root of the aorta, where the pericardium supplies the place of the cellular membrane, the sac bursts before it attains any great magnitude. Hence also in the cranium, where the external membrane is wanting, a lesion that would elsewhere produce aneurism, here is followed by rupture and apoplexy; however the arteries of the brain are occasionally affected with dilatation.

A circumstance (having peculiar reference to treatment) almost invariably follows the formation of false aneurism. I allude to the deposit of fibrin in concentric layers within the sac, commencing on its parietes, the most central of which are usually little more than coagulated blood, while those in contact with the sac are fibrous, and have the appearance of flesh deprived of its colour, and in proportion to the date of their deposition they adhere together with greater or less firmness.

Now by referring to the false aneurism on the table, you cannot fail to perceive the most central layer is almost as dense and firm as that at the circumference, and also that the communication between it and the aorta is hermetically sealed by a membrane stretched across the opening in the side of that vessel. The cavity in the vertebræ was also full of dense fibrin, having a smooth, white surface, therefore the blood could neither enter the sac nor could come in contact with the naked bone, *ergo*, a spontaneous cure was effected. Hence the difficulty of proving by the more direct signs, the positive existence of this tumour when I first saw the patient,—I say positively, because I did diagnose its existence negatively with the aid of the history and rational symptoms, viz. those of compression.

DIAGNOSIS.

When an aneurism is buried deep in the chest, and not capable of being detected by sight or touch, it does not pre-

sent a single general sign peculiar to itself, and therefore pathognomonic of its existence. Cases are not wanted in which it occasioned no functional derangement or inconvenience whatever, and the first circumstance that reveals it is sudden death. There is only one unequivocal and certain sign, viz. a tumour presenting itself externally, having an expansive as well as a heaving pulsation, synchronous with the systole of the heart. Of the remaining general signs, viz. difference in the radial pulses, constriction at top of sternum, purring tremor, aphonia, dysphagia, pain in the spine, palpitation, dyspnœa, cough, tendency to syncope, terrific dreams, starting from sleep, hæmoptysis, discoloured complexion, congestions, serous infiltration, &c. &c., a large number are identical with those of organic disease of the heart or lungs, from identity of cause—obstruction to the circulation. The first seven mentioned above are however more characteristic than the others, although yet ambiguous and unsatisfactory, as they only bespeak secondary lesions, while they fail to proclaim the latent cause of the mischief. But when they coincide with the results of auscultation, they lose their ambiguity, and rise into real importance; for the general and stethoscopic signs reciprocally borrow a precision and certainty, of which, when taken separately, they are destitute. Of the value of each general sign, abstractedly considered, I shall not stop to inquire, as they are only of value in combination, and then one corrects the other. I shall in preference endeavour to group, first, the physical, and then the general symptoms peculiar to each lesion, if any combination of the latter are peculiar to the particular affection in question, as this mode offers the great advantage of assisting the memory. I do not pretend to lay before you a perfect synopsis, or all the details necessary to make a nice differential diagnosis; it would be impossible in a paper like the present, as time and space both oblige me to make my remarks very general.

PHYSICAL SIGNS.

The most direct or positive symptoms of aneurism are derived from the impulse and murmur caused by or within the diseased vessels. Of course I mean when taken conjointly with those arising from compression or destruction.

When dilatation of the arch and ascending aorta is present, its presence is indicated, 1st, by a constant pulsation above the sternal ends of the clavicles; strongest at the side the enlargement is confined to; but this pulsation is never communicated to the costæ or sternum, unless the tumour is extremely large. 2ndly, A hoarse murmur, loudest in the same situation, is generally present, synchronous with the systole, and having the same duration; this sound, like the impulse, will vary with the situation of the dilatation. I said loudest above the clavicles, because this fact greatly assists in distinguishing it from that which proceeds from diseased aortic valves. It is also usually distinct on the back. 3rdly, A purring tremor, felt likewise above the clavicles, strong in direct ratio to the force of the circulation and to the rough and unequal state of the aortic membrane.

I am not aware of any general symptoms, or combination of them, characteristic of this affection.

SOURCES OF ERROR TO BE GUARDED AGAINST.

In the nervous chlorotic female the above physical signs may be present, modified however, and to be distinguished with comparative facility by a practical acquaintance with such cases, aided by the history and general symptoms of the individual case.

Aortic regurgitation sometimes occasions impulse and murmur above the clavicles, but as this affection has a combination of symptoms peculiar to itself, it can be excluded by negation; therefore to mistake one for the other would be negligent. The Society will probably recollect the well-marked case of regurgi-

tation from rupture of the valves, to which I called their attention last year.

DIAGNOSIS.—FALSE ANEURISM.

Sacculated thoracic aneurism indicates its presence by a pulsation both above and below the clavicles (stronger below). In the front the pulsation is more forcible over the tumour than at any point intermediate between it and the heart, or indeed than the impulse of that organ itself; when the disease is situated either in the beginning or middle of the arch, the impulse is strongest above and below the right clavicle and at top of the sternum, the base of the neck on that side being puffed and swollen. When situated at the beginning of the descent, the pulsation, &c. incline to the left. But if it affects the descending portion, the impulse is rarely felt in front, it buries itself so deeply in the lungs (as in two cases to be related), and even on the left side of the back the impulse will be much masked until the tumour becomes very large, and comes in contact with the costæ; however, percussion ought to indicate the presence of a solid body much earlier.

Murmur in old aneurisms is not always discoverable to a sufficient degree, at least to be very much depended on; when, however, an *abrupt* murmur is perceptible on the back, over the seat of dulness, it ought to have considerable weight. But if on the back the murmur is more abrupt and rasping than the ventricular systole in the præcordial region, then the evidence of aneurism is almost positive.

Both in considerable dilatation of the cross and sacculated aneurism I have observed another symptom easy of appreciation, viz. by placing one hand flat over the suspected seat of disease, and the other opposite to it on the back, I have been enabled to assist, or rather render positive my diagnosis, which was otherwise doubtful.

The sensation of an expansive heaving being communicated to the hands (I do not mean impulse), all or either of the following general signs may be present: a pulsating tumour exter-

nally, dulness on percussion, dysphagia, aphonia, pain in the spine, aching and numbness of left arm, weight in the chest, inequality or extinction of left radial pulse, swelling at root of neck, double impulse of the heart when the tumour is behind it, and specially a peculiar mode of respiration caused by a pulsating body pressing on the bronchi.

The following are the sources of fallacy which must be excluded, *negatively at least*, from our premises, before we can safely attempt a conclusion, or arrive at a correct diagnosis:

1st. Glands and other tumours receiving pulsation from an artery beneath them.

2nd. Hydropericardium.—The impulse in this case is never exactly synchronous with the ventricular systole, nor has it the powerful expansive heaving of aneurism, the shocks being of unequal force, and alike wherever heard; whereas in aneurism the impulse is strongest over the tumour, and stronger over the heart, than in the space between.

3rd. Hypertrophy, with dilatation of the heart.

4th. Subclavian and carotid aneurism, from which it may be easily distinguished.

TREATMENT.

Before we proceed to the individual cases, I shall allude, first, to treatment in general, requesting you to bear in mind that in this we must take a lesson from Nature. I shall not enter further into the minutiae of her mode of effecting a spontaneous cure, than by reminding you that it is by the coagulation of the blood within the sac, the more fluid parts being absorbed, fibrin remains, and this is deposited in concentric layers in false aneurism, and generally in eccentric layers in the true species. Hence we derive one grand indication in the special treatment, viz. to promote coagulation in the sac, and consequent deposition of fibrin, and in false aneurism alone can we indulge the hope that our efforts will be crowned with success.

Coagulation is to be promoted; 1st, by diminishing the projectile force of the heart; 2nd, by rendering the blood as fibrinous as possible; 3rd, by the administration of medicines, that experience teaches us have the effect of encouraging or promoting coagulation; 4th, by the application of cold, locally or as near the tumour as possible; 5th, by all but perfect rest of mind and body for many months after all symptoms of the disease have vanished.

1st. The first indication is then to diminish the projectile force of the heart. This is to be effected by the abstraction of blood from the general circulation, by purgatives, digitalis, &c., and the regulation of diet; however, the two modes of carrying out this proposition have been advocated, viz. that of Valsalva and Albertini, approved by Pelletan, strongly recommended by the immortal Laennec, Bertin, and Bouilland. I need do no more than remind you, that it consisted of the repeated abstraction of blood, and low diet, until the patients were reduced to so great a state of debility, as to be unable to do more than raise their hands from their beds. The second mode is that proposed by the late Dr. Hope for the treatment of hypertrophy, whose experience has been confirmed by Drs. Stokes and Beatty, and I feel no hesitation in saying, that it is the most worthy of your confidence.

It occurred to me once to be present when an out patient of the Hospital St. André of Bordeaux consulted the physician of the day for extreme dyspnœa; he was suffering from enormous dilatation, with hypertrophy of the heart, and a large bleeding as a prelude to Valsalva's treatment, was ordered: he was passed to the opposite apartment and bled, but before $\frac{3}{4}$ x. had been lost, the man fainted, and the physician was summoned because the intern could not recover him, the pupils followed, and we found the man on the ground, dead, and his body was examined next day. This accident made so great an impression, and read me a practical lesson of a nature, that will not be easily obliterated from my memory. Great loss of blood, instead of

lessening in every case the *vis a tergo*, not uncommonly begets anæmic reaction, which gives rise to violent palpitation, pulsation in the sac, and that too (another reason why large and repeated venesection is not applicable to our object) when the blood from the same cause, instead of an increase of fibrin, has become serous, pale in colour, and contains only from $\frac{1}{6}$ to $\frac{1}{12}$ of its natural quantity of crassamentum. How can treatment having such effects, in the least contribute to our second indication? To render the blood as fibrinous as possible, we would recommend, that the first indication be carried out by one general bleeding, sufficient to weaken the power of the heart and the pulsation in the sac, and that it be repeated, say in two months, or when increased force of pulsation called for a repetition, and that this effect be kept up by digitalis and purgatives, carefully watching the approach of anæmia, as pointed out by a jerking pulse, general debility, paleness of the lips, a feeling of palpitation, &c., when depletion must be suspended. The second indication is to be carried out by a dry animal diet, (unless there be a contra-indication), fluid being allowed in small quantities.

3rd Indication. Have we any medicinal agent that is known to promote coagulation? Digitalis does so indirectly, by retarding the circulation; the more direct effect of acetate of lead is known to all, but it has one defect. I allude to its tendency to produce gastro-enteritis. Allow me to bring under your notice another agent, alum, which to my knowledge has not been proposed or administered with this intention. Its instantaneous effect in producing coagulation out of the body, is not known to all. I prescribed it first in a case of false aneurism, with marked benefit; a spontaneous cure followed, I do not mean to say, entirely owing to it. I have used it with decided benefit in a large number of cases of hemoptisis.

4th Indication. The external application of cold, by means of a bladder, as near as possible the seat of disease, and as long as the pain it occasions allows it to be borne, and when re-

moved, to be replaced by a cold cataplasm. Of the effect of a reduction of temperature in promoting coagulation, I need say nothing, it is so generally admitted.

The 5th Indication. Mental and bodily rest for a considerable period after all symptoms of the disease have disappeared. Its propriety and reasonableness are so apparent, that it will be sufficient to mention it, lest I be accused of forgetfulness.

If this sketch of the treatment of aneurism be followed up in the false species, where no dilatation or hypertrophy of the heart, or disease of the internal membranes of the aorta are present, we would be justified in indulging the hope, nay, probability of success in many cases, now lost. Our means of diagnosis so much improved, even since the time of the famous Laennec, have enabled us to discover, that this disease (almost always fatal hitherto), is much more common than was, or is supposed.

The year before last, I was enabled to draw the attention of the society to a very interesting case of traumatic aneurism. I allude to Bennett, whom some members saw and examined during life. You may probably recollect, that at a very early period after the accident, both the rational and physical signs concurred to prove the existence of aneurism, and the result painfully confirmed the previous diagnosis, the tumour having reached the chin and pushed the larynx under the ear, and caused death by suffocation.

I hope also to be enabled to lay before you a preparation, showing a mixed aneurism arising from the root of the brachiocephalique artery, wherein we were enabled, from the combination of the rational and physical signs, to make a correct diagnosis five months before death, notwithstanding the case was so obscure as to have been called and treated as one of phthisis, the secondary effects of compression and congestion on the superior lobe of right lung having been mistaken for tubercular condensation; the other symptoms were dyspnœa, emaciation, debility, quick pulse, night sweats, &c. Some

may be inclined to exclaim *cui bono* either affection was certain to terminate fatally. This, however, I deny as a general rule, as I shall presently allude to a case to prove the direct negative, and one too that was supposed to be phthisis, in which the presence of aneurism of the cross of the aorta was to my mind demonstrated, yet, a cure by the deposition of fibrin was effected, and the individual regained his health; but here recovery having taken place, it may be objected with effect, that the aneurism never really existed; to this I have only to reply, that the combination of rational and physical symptoms, demonstrated it to my humble judgment, as they led to the same result in the case, to which more particularly I wish to direct attention at present, and, as if to strengthen this position, it so happens, that in Harding's case, the particulars of which I am about to detail, a false aneurism was, at the time of this disease, and at least since last May, a period of six months preceding death, according to my estimation, in a dormant state (see diagnosis made at the time in a letter to Dr. Symond), a spontaneous cure having been completed, as the state of the tumour proves. It contained no cavity, but was filled with laminated, condensed fibrin, and could neither have increased in size, nor yielded pulsation, since the communication between it and the aorta was stopped by a polished membrane, firmly adherent to the well defined edges of the original rupture which produced the false aneurism; and the aorta at its base was of its natural dimensions, though its membrane was covered with morbid deposit. It is worthy of note, that this membrane, though fine and delicate, was supported and adherent to the body of fibrin within the sac, and although its existence was morally certain, it could not be proved by strict deduction, and notwithstanding it did not the less exist, as the result confirmed. Now if this individual had not died, and no other symptoms developed themselves, than those which were present in May, we would not be justified in attempting to bring the case forward as one of aneurism, because we were then unable positive-

ly to prove its real existence. Now if the moral certainty turned out correct, ought we not to place some confidence in a diagnosis, drawn by strict deduction from the same combination of rational and physical phenomena, which guided to a correct result in the other cases alluded to, and not deny its existence, simply, because death had not revealed it to our senses. But to return to the case, where nature, aided by medicine, effected the restoration that has now lasted five years.

In the year 1836, I was requested to see a master builder in Thomas-street, who was supposed to be dying of phthisis, brought on by a fall from a height of thirty feet, four months previously. Emaciation was considerable, expectoration abundant, ropy, and when I saw him, yellow and very frothy; a constant short cough, voice altered and husky; considerable dyspnœa, night sweats; pulse 100 to 120; top of left lung condensed, in which the rales were very loud and large; impulse of the heart feeble; family consumptive; pulse in left radial very weak; he complained of an inability to expand his chest and of a pain moving down the left arm; and, where the third rib joins the sternum, he states, every thing he swallows appears to stop and give him some pain, but more uneasiness. Under the cartilage of the third rib, was evident both to eye and ear, a heaving expansive impulse, having treble the force of the heart, accompanied by a hoarse bellows' murmur. The diagnosis was a false aneurism of the aorta from ruptured arterial coats, arising immediately after the orifice of the left subclaviam, the lungs suffering secondarily by compression; this patient continued the following treatment for twelve months. The impulse, dysphagia, and other symptoms, gradually disappeared at the end of eight months. Dr. Prichard and Dr. Symond both saw this patient. The impulse became less by degrees, until it finally ceased, since when the patient has enjoyed excellent health. The treatment adopted was animal food in very small quantity, twice daily, with little or no fluid; perfect rest of mind and body, the patient being allowed only to move from his bed to a sofa; small

cupplings when indicated by the increased power of the heart ; a very large bladder filled with nd salt, kept almost continually over the seat of impulse, that is, as long as the pain it produced could be borne ; and for medicine, four grains of alum, and half a grain of digitalis, *ter die*, as long as it could be continued, the alum being gradually increased to twelve grains per dose. At this present moment, although Mr. W—— enjoys excellent health, the superior lobe of the left lung continues condensed, no vesicular respiration taking place in it ; to percussion it yields a dull sound, more markedly so over the spot where the pulsation formerly existed. The thorax has fallen in over the condensed lung, and remains immoveable during inspiration. Some of the tones of Mr. W.'s voice are still rather husky. He, however, does not suffer in the slightest from dyspnœa or cough, though when he has a cold, the latter has a peculiar sound. The resonance of the voice is less over the condensed, than over the healthy lung. It is to be remarked, that this would not be the case in condensation from pneumonia, for obvious reasons.

We shall now proceed to detail the case to which I would more particularly claim your attention.

May 24th, 1841. Henry Harding, æt. 35, a counting-house clerk, having had delicate health for a considerable period, in March, 1840, he fell on his left side from the top of a stage coach, which bruised him much, but in a few days he returned to his usual occupation, as he supposed, well ; soon after, however, he began to experience a dull, knawing pain under the left scapula, shooting through his chest to the left mamma, which in two months became so troublesome, as to deprive him of his rest at night. He now for the first time applied for medical aid, but without any relief from pain. He presented himself to me, May 24th, 1841, 14 months after the receipt of the injury. His complexion is of a dirty white, with dark lines under each eye, countenance intelligent, but peculiarly anxious,

and there is something in it indicating serious disease, yet not easily expressed in words.

His digestion and general health are pretty good for a person so much confined as he has been; he can walk up hill fast without inconvenience; no cough; voice natural; some sense of uneasiness at top of sternum, but less than it was. Five months since slight difficulty in swallowing his saliva, but not his food; this is neither increased by going up stairs fast or active exercise. Pulse at left wrist smaller than at right, though natural in strength, when compared with the action of his heart, which beats 90. His thorax uncovered to the waist. No fullness at base of neck at either side; veins natural; respiration quiet, and the mode of performing it healthy. His person yields to the left side, and the costæ are pressed in, but the capacity of the thorax is not thereby diminished, as it is wider or spread laterally,—a circumstance of consequence, as proving the non-existence of pleurisy as its cause, particularly when the knowledge which auscultation offers is also brought to our assistance, and confirms that view, as in this case. The spinal processes of third and fourth dorsal vertebræ are much depressed; here the upper and lower portion of the body form an obtuse angle laterally; the dull, knawing pain has its seat a little to the left of this angle, and shoots through the chest, to which side he has contracted the habit of yielding, to give ease, as he states, to the pain.

I could detect no derangement of the functions of the lungs by auscultation, nor did percussion indicate any disease. The impulse of the heart feeble; sounds rather louder and clearer than natural. No abnormal impulse along the course of the large arteries, although our patient was particularly requested to walk fast to accelerate the circulation, nor above either clavicle. At the origin of left subclavian a slight whiz was evident when the left hand was brought forward, and the patient made to recline, but immediately disappeared when he stood up.

Ordered cupping by three glasses once per week (about four

ounces), with sinapisms to the left side; ext. conii and ext. hyosciam. gr. v. at night, with an occasional aperient; food in small quantities; no stimulating drink.

June 16th. The cupping and sinapisms gave him considerable relief, as also did the pills at night, but they now began to lose their effect, and the *pain returned, but is limited to the back*. Difficulty of swallowing, before slight, is rather increased; his voice has become rather husky, and the first sound of the heart rather louder than natural over the spinal processes of third to sixth dorsal vertebræ, and above the sternal ends of the clavicles. He complains of a feeling of constriction at top of sternum; base of neck natural. No other new physical or rational symptom. Pulse still 90, and very small in left arm.

Repeat cupping, pills, &c. &c., and apply a belladonna and opium plaster to back, and take one pill three times daily, containing four grains of alum.

July 1st. No relief from pain since last report; it extends down left arm. Dysphagia much increased. Aphonia almost complete during past week; rather better to-day. Constriction under and at top of sternum more marked, yet still neither are increased by walking fast up a hill, nor does he suffer from the slightest dyspnœa. (Referred him to Doctor Butcher for his opinion.)

July 20th. Dysphagia and aphonia continue; constriction more oppressive. Complains of pain in swallowing food; referred to where the cartilage of the third rib joins the sternum. The mode of performing respiration natural; the air does not enter the lungs by jets, but freely, *without murmur or impediment*. A well-marked impulse is felt above the sternal ends of both clavicles, and slightly over third and fourth dorsal vertebræ, where the sound before referred to had evidently increased in intensity. Pulse rather more indistinct in left radial. The pain continues, and extends down the arm. Under and above the sterno-clavicular articulation the murmur before alluded to is still present, accompanied by a sound synchronous

with the first sound of the heart, and strongly resembling it, but much louder and clearer here than at any intermediate position between this and the heart, or even over this organ itself. This is evidently the same sound, only become more intense, that was first observed June 16th over the dorsal vertebræ. A deep-seated throb or heaving may be felt accompanying it now, which was not then present, by placing one hand on top of sternum, and the other on the back.

July 26th. Considering the case extremely interesting, I referred our patient to Dr. Symond for his opinion and diagnosis. Our own opinion at this period was communicated by letter to Dr. Symond, who requested it in return for his.

Aug. 5th. Larynx descends lower at each inspiration, and the skin at base of neck slightly drawn in, and thus the mode of breathing is slightly altered, showing some compression on the bronchi, still no well-marked physical sign of impeded respiration. Percussion still but little altered. The sound and heaving under sternum and at back rather more forcible, yet it does not communicate pulsation to sternum or costæ. Aphonia and dysphagia increased; no fullness at base of neck. Harding proposes going to the country, and during his stay is to take pil. saponis cum opio, gr. v. at bed-time only.

Sept. 16th. Our patient has returned from the country, where he has resided since last report. No pulse in left radial; pain in back continues. Dyspnœa prevents his walking across the room. Aphonia and dysphagia constant, and much increased, the constriction occasionally amounting to almost suffocation. The larynx rises and falls considerably, and the skin at base of neck is much drawn in at each inspiration. Countenance anxious, almost to excitement, when asking for some relief. Percussion dull over left side of thorax, anteriorly and posteriorly; remarkably so on the back and over superior two-thirds of sternum, and towards the left, as low as the third rib. Respiration in left lung very feeble, and accompanied by many rales; resonance of the voice decreased; expectoration abun-

dant and ropy, and the cough is frequent, and has a peculiar ringing sound. Action of the heart frequent, though feeble, when compared with the strong impulse above the sternal ends of the clavicles, top of sternum, and towards the left, which is also evident over second to fifth dorsal vertebræ, accompanied by a low-toned, hoarse murmur; this impulse is perceptible under the sternum itself, though not forcibly communicated to it; no fullness at base of neck, such as is usual in most cases of false aneurism arising from any part of the cross situated where it joins the ascending aorta, and the origin of left subclavian, consequently these phenomena must be produced by either extreme dilatation or true aneurism of the cross. The fullness at base of neck was well marked in the first two cases alluded to in this paper, which were both diagnosed false aneurism, the one turned out to be of the mixed species.

Nov. 1st. During the month of October, Harding continued to get much worse; the extent of dulness over the sternum much increased; the left lung rendered nearly solid, air only penetrating the large tubes; inability to lie down in bed at night. If he falls off to sleep, he starts up in a fright.

Incapable of swallowing any solid, and even fluids often return. The constriction in the chest has become so oppressive, as upon any exertion to amount to strangulation. The face is much injected; the veins of the neck distended; expectoration very abundant, containing some blood; voice extinct; general debility; a constant feeling of hunger, which he is unable to satisfy.

Nov. 7th. The slightest exertion or mental anxiety produces instantly a sort of fit, or violent effort to overcome a horrible feeling of suffocation.

Nov. 14th. Saw and carefully examined our patient this day, as did also Dr. Symond; no fullness at base of neck; all the rational symptoms much increased, as also the dulness, both in extent and density; the impulse larger (if I may so speak) or heard and felt over a greater extent, and is now communicated

to the sternum. As I had not seen him for a few days, I was much astonished at the rapid rate the aneurism increased in size; the fits of choking have become very frequent and violent, and he died in one.

Nov. 17th. Post mortem examination did not take place until the 25th. The body is considerably emaciated, and presents little or no appearance of decomposition. Nothing abnormal in the form of the base of the neck; the thorax was laid largely open by sawing the clavicles at their humoral extremities, and the costæ in the axilla.

The right lung healthy and crepitant, bound down, however, by very strong adhesions. The left was very dark, and rendered dense by extreme congestion, and of course not crepitant. The pleura contained about three or four ounces of bloody serum, and there were no adhesions to the costal pleura, except around the base of a small tumour yet to be described. On attempting to remove this left lung, we discovered in the posterior mediastinum, a large tumour not adherent to it; and more to the left, a strong fibrous band, formed I think from a portion of lung and pleura, passed between the two tumours, from the second dorsal vertebræ to the fifth, intersected the aneurism, and bound it firmly to the bodies of the vertebræ. The part of the tumour still to the left, was enveloped in the substance of the lung, a thick layer of which separated it posteriorly from the costæ, which it did not touch.

This band being cut, and the lung dissected off this smallest tumour, we found it attached to a strong fibrous membrane forming a sort of pedicle, one and a half inches in diameter, to the third and fourth dorsal vertebræ; this divided, a large cavity filled with fibrine presented itself, in the bodies of the above named vertebræ, and reaching nearly into the spinal canal; on replacing the dense piece of fibrine in the cavity to which it was evidently moulded, it fitted exactly. The left carotid arose from the dilated cross, ran up the side of the aneurism, and was of its natural size. The left subclavian sprung from the supe-

rior part of the largest tumour, and was very small in diameter, though otherwise normal, as was also the brachio-cephalic. The tumour itself, containing a quantity of fibrine, was very firm, particularly the smaller portion of it, which was so filled with the same substance very much condensed, as to feel quite hard. The lining membrane of the ascending and descending aorta was much inflamed, being very red and swollen, in places presenting a large number of white spots underneath it, evidently lymph, the product of sthenic action in the cellular membrane beneath, none of which were hard or appeared to contain any earthy salts; the whole mass was now removed from the body with the heart and great vessels, which being placed in position on the table, and the lung, &c. dissected off, two tumours presented themselves, the smaller on the left, occupying about two inches of the descending aorta, which latter, from the inferior end of the tumour to where it passed the diaphragm, exhibits a good specimen of simple dilatation in its first stage. This body is about the size of a clenched hand, very dense and firm, having no cavity; its walls are thin and membranous, now that the tissue of the lung is removed from them, which latter was not at all disarranged, though gorged with blood. The coats of the aorta end abruptly at the origin of the tumour; at this point its circumference, however, is not increased; this is evidently a false aneurism from rupture; the opening in the aorta, through which the blood entered the aneurism, is about one inch and a quarter in diameter, its margin is well marked, but this passage is now covered by a fine polished membrane, stretched across it, and intimately adherent to the internal membrane of the aorta all around the ruptured edges, supported underneath by dense fibrine; thus effectually stopping the communication between the aneurism and the vessel. Here then we have a spontaneous cure of a false aneurism of the descending aorta. No wonder then, that the positive signs of this affection were absent in May last, and that those only of a negative character could be recognized. It was entirely enveloped in the tissue

of the lung, and was attached by a narrow neck to the aorta and vertebræ.

The second or larger tumour to the right, commences immediately, and suddenly after the giving off of the brachio-cephalic artery, and extends along the cross, until its base nearly joins the smaller tumour, with which it is connected by an undilated portion of artery, which was most probably prevented from dilating by the fibrous band which bound it to the vertebræ.

This presents a fine specimen of true aneurism, or that wherein one side of an artery is dilated, the proper coats of which may be traced all around this preparation without difficulty ; its parietes are laid open in front, and expose to view the inner membrane, smooth and polished in parts, and elsewhere presenting a number of white, often rugged spots, underneath it, identical with those in the aorta. You may also remark, that it does not adhere to the mass of dense fibrine it contains, and although dilated to five inches in height, yet its parietes are of their normal thickness. It is remarkable it did not contract adhesions with any of the surrounding tissues. The heart was flaccid and small, otherwise healthy, as were also the valves, the pericardium contained $2\frac{3}{4}$ of red fluid. There was no clot or fluid blood in either aneurism or in the heart, though the latter, as well as the large vessels, also contained fibrine, the relative position of the œsophagus and bronchi, to each part of the tumour, is a matter of some importance, to which I would request attention, as it explains which aneurism existed first, connecting the dysphagia and the guawing pain with the false aneurism.

The œsophagus and left bronchus are both lodged in a sort of sulcus, formed in, and between the two tumours, which were in consequence unable to effect more than a slight degree of pressure upon them, until the pulsation in the true or large aneurism became very considerable, when it directly compressed the trachea. The œsophagus and the left bronchus crossed be-

tween one end of the false aneurism, and the bodies of the third and fourth dorsal vertebræ, where a continued, though slight pressure was exercised on each, affecting the bronchus least, and œsophagus most, from the absence in it of cartilaginous rings; the former is, however, flattened. It is worthy of remark, that, in position, this point of pressure corresponds to the seat of constriction pointed out by the patient during life, so early as when I first saw him in May last, at which period, I do not think it possible the larger tumour could have existed, the fast increasing size of which I watched from July to November 17th, the date of our patient's death.

Previous to the month of March, 1840, it appears he enjoyed pretty good health (with, I suppose, the exception of dyspepsia, which all those who lead his sedentary life suffer more or less from), never having had an attack of rheumatism. Now this is negatively important in reference to the state in which we found the lining membrane of the aorta; then we have the tissues of the system more or less out of tone, from a sedentary life, in a dark and badly ventilated apartment, and probably also from dyspepsia.

Receiving a violent shock when he fell from the top of a coach, although he returned to his occupation in a few days, as he supposed, well, it appears to me very probable, that the fall ruptured the inner membranes of the aorta, at that spot where we find the false aneurism situated, and this position is strengthened by the fact, that he soon after experienced the gnawing pain which the destruction of the bodies of the third and fourth vertebræ, to which it was attached, explains, and also that this was the first symptom, and dysphagia the second, which a reference to the relative position of the œsophagus and this part of the tumour, at a particular spot, cannot fail to convince was produced by it, and not by the larger tumour or true aneurism, the development of which, it strikes me, could not have been considerable, prior to the month of July, before which, I make no doubt, some slight simple dilatation of the cross existed, pro-

duced, most probably, in consequence of the sthenic action (the effects of which were noted after death) extending to the muscular coat, and impairing the elasticity or resisting power of the vessel : thus may be explained the origin of the true aneurism, the progress of which was marked by the development of a series of characteristic symptoms, none of which were present previous to June 1st, then very few ; and even those up to July 29th were not very prominent, as Dr. Symond can vouch, who examined him on that day.

The next point worthy of remark is ; how did it happen, that if the false aneurism was the cause of the aphonia and dysphagia, neither was increased by active exercise ? which might naturally be supposed to increase the violence of the alternating pressure on the bronchus and œsophagus, if a pulsating tumour were its cause. The same reason, it occurs to me, that explains the absence of impulse and murmur, viz., the tumour being filled with dense fibrine, and the communication between it and the aorta being cut off, which rendered it incapable of pulsation, will also explain, why neither were increased by exercise to August 1st. I am unable to account for the recurrence of the gnawing pain under the circumstances. It will be asked, how do you account for the absence of dulness over the seat of false aneurism ? I answer, I can only do so by supposing the presence of some emphysema in the lungs around the tumour ; this supposition is very probable, and analogy countenances it. I may be asked, why suppose at all ? because the lung was, at the period of death, rendered so solid, and so uniform in colour by congestion, that I was unable to observe the size of the air cells ; and I feel confident, that the dulness which such a solid body ought to produce, could scarcely escape my repeated observation, as well as that of others, unless some such cause masked it.

I feel equally confident, that the true aneurism did not pulsate morbidly, if at all unnaturally, prior to the month of July, that is from the time I first saw him in May, and that pulsation existed in the false aneurism, previous to my seeing him, there

can be no doubt. The only mode of explaining the rapid development of the tumour, during the patient's residence in the country, is, by taking into account the inflammatory action that was going on in the lining membrane of the aorta, which must have tended to destroy the elasticity, and of course the resisting power of the vessel, at a moment when pure air and improved general health increased the injecting force of the heart; thus it appears to me, may be explained the rapid growth of the true aneurism, which it is remarkable, had not contracted, as the smaller one did, any adhesions to the neighbouring tissues.

The walls of the aorta, thus largely dilated, retained the thickness of the normal vessel. This is usually observed in parallel cases (see preparations on the table). You will observe no fibrine attached to the walls of the sac, as in the false aneurism, which presents a beautiful specimen of the disease as effectually cured by its agency as by ligature.

ART. VII.—*A Case illustrative of the Means adopted by Nature for the spontaneous Suppression of Hæmorrhage from Lacerations of the large Arteries.* By JOHN HOUSTON, M. D., M. R. I. A., &c., Surgeon to the City of Dublin Hospital, Lecturer on Surgery at the School of Medicine, Park-street, &c. &c.

[Communicated to the British Association at Cork.]

SIMON WHITE, aged 33, was admitted into the City of Dublin Hospital on account of an accident by which the right upper extremity was torn from his body at a point corresponding to the insertion of the deltoid muscle. His arm being caught in the revolving strap of a corn-mill, he was lifted by it from the ground, when the arm was severed from the body, and thrown along with himself, into a heap of oats at a little distance. He lay for a short time insensible, but soon got up again and descended

three flights of ladders, without knowing, as he averred, that he had lost his arm,—so sudden was the injury, and so little did he suffer from the act of dismemberment. He then became weak and sick, and was conveyed in about half an hour to hospital, where I saw him immediately on his arrival. His pulse was then small and irregular; he looked pale and frightened, and complained of a load at his heart, but was otherwise so little unwell that he proposed to walk up stairs to the ward without assistance. When laid in bed he was seized with a fit of trembling, although without any sensible diminution of the natural heat of the body. His breathing was a little hurried, but as his friends stated at the time that he had a bad chest, this symptom was not much regarded.

The surface of the stump, when stripped of the rude dressings that had been laid over it in the hurry, presented a coating of grumous blood and oats, the latter, firmly impacted in the flesh. It was extremely irregular. Of the nerves, some (the median in particular) hung out loose for many inches, having been pulled up by its branches from the fore-arm; others did not appear at all, having been torn out by the roots from the brachial plexus. The lesion of the muscles and skin on the outside of the arm was straight, as if it had been made by a knife,—the result, perhaps, of the pressure of the strap on them before the yielding of the bone; whilst, on the inside, the muscles, like the nerves, were irregular, and the skin torn for some distance from the side, obviously by a force of laceration. There was no discharge of blood from any part of the wound, except a little oozing from a few scattered muscular vessels. The extremity of the brachial artery was not exposed to view, being less prominent than many of the other textures, and concealed by some coagulated blood, which lay entangled among the lacerated parts; the traces, no doubt, of the gush which must have taken place on the instant of the solution of continuity of so many vessels.

It being an object to secure the main artery against bleed-

ing during the interval which it might be necessary to allow to elapse before attempting amputation of the shattered stump, a search was made for that vessel with the view of applying a ligature on it. When liberated from the torn sheath, to which its adhesion was so trifling as to admit of separation without the aid of a cutting instrument, the artery appeared dark coloured, smooth, and tumefied, the very extremity being the largest part. When pressed between the finger and thumb, it felt soft and elastic, as if tensely filled with half-fluid, half-coagulated blood, and was distended and jerked by pulsations synchronous with those of the heart ; but, nevertheless, not a drop of blood either issued, or could be squeezed out of, its truncated extremity. In this state it was seen and felt by several persons, who regarded its condition of security against bleeding as very remarkable. A ligature was then placed on the vessel, about an inch above its torn extremity, cold lotion applied, and a little wine administered. Amputation at the shoulder-joint was next day performed, and the patient in due time recovered perfectly.* But as I have, here, only to do with the condition of the artery by which the hæmorrhage was so effectually arrested, I shall pass by all other matters, and describe the appearances which it exhibited after removal from the body.

The extremity of the outer or cellular coat of the vessel was drawn, at the point of its laceration, over the mouth of the divided inner and middle coats (in the manner that a purse is closed by its string), and distended with a clot of blood, which was entangled and intimately united with the fine meshes of the torn cellular tissue on its inner surface. The two inner coats of the artery were (if it may be so expressed) drawn within the outer one, for at least half an inch, the tube diminished in calibre, and thrown into transverse wrinkles, but not lacerated at any part except that where it had been actually torn through, and the canal occupied by a coagulum. Outside the mouth of these

* Dublin Medical Press, vol. v. p. 211.

tunics there lay a small piece of pure coagulated blood like that in their cavity;* but the remainder of the projection in front consisted of the textures above described, viz. a mixture of blood and cellular tissue, which offered a complete barrier to further hæmorrhage. This grumous materiel was even traceable for a short way up between the tunics, assisting by its pressure there, from without, to diminish the calibre of the vessel, and contributing also to that increase of its bulk observed in the first instance, before the parts had been interfered with by dissection.

The other extremity of the artery—that in the part of the limb torn off—was found retracted, empty, and open-mouthed. The veins were also irregularly torn and empty.

The annexed wood-cut, exhibiting the lacerated artery, of the natural size, in a vertical section, demonstrates all these circumstances very satisfactorily.

1. The brachial artery.
2. The ligature of security, placed on the artery about one hour after the accident.
3. The longitudinal slit made in the artery after amputation, to show the disposition of its tunics at the torn extremity.
- 4, 4. The internal and middle coats, presenting a straight edge, inferiorly, at the torn part.
- 5, 5. The external coat, projecting nearly half an inch beyond the internal and middle coats; closed over at the extremity, and distended with grumous blood entangled in the cellular tissue of its inner surface.



* The blood in the interior of this part of the artery and outside its mouth, although coagulated when thus examined, was, I have no doubt, fluid, up to the time of the application of the ligature of security on the vessel.

- 6, 6. A small space, corresponding to the open mouth formed by the inner coats, containing a plug of coagulum.

OBSERVATIONS.

The results of experiments on the blood-vessels of lower animals, undertaken to determine the phenomena which occur in the reparation of wounded arteries, cannot fully be relied upon as indicating those which take place in similar lesions in the human body. There are differences in the organization of the vessels, in the degrees of coagulability of the blood, and in the reparative powers, in animals, as compared with man, which break the analogies and mar the conclusions we might otherwise be justified in drawing from such experiments. Investigations on the former may give us a knowledge of the general principles which regulate the actions of reparation in all, but, nevertheless, this constitutes only an approximation to a knowledge of what actually occurs in man. The real facts, those on which we can rely in practice, can only be come at by ocular inspection of them as they take place in the latter.

It is to be presumed, that almost all that can be done, on this head, by experiments on living animals has been accomplished; and we must now, therefore, look to the opportunities which may arise out of the frailties and casualties to which man himself may become the victim, for extension of our knowledge on this interesting branch of surgery.

That our information on this subject is still vague and uncertain every one must feel; and, as expressive fully of this fact, and also, as giving the only advice which can be followed at present, regarding the matter, I shall quote from one of the latest and best writers on the subject—M. Sanson, who says, that as none of the hypotheses hitherto published, account satisfactorily for the facts connected with the spontaneous stoppage of hæmorrhage from wounded vessels, we must be content, for the present, with registering the cases as they occur, and awaiting farther and more complete observations.

The case before us affords a satisfactory instance of the arrest of the hæmorrhage in a lacerated artery, by the agency of the external tunic alone. Such, it is conjectured, is what occurs in arteries which do not bleed when torn across, but I am not acquainted with any description, much less any specimen from the life in man, placing the matter clearly beyond a doubt, like that which I have here described.

When stretched beyond its power of resistance, the artery gave way. The inelastic, internal, and middle coats first yielded by a simple transverse fissure. There was no irregular breakage here, such as some suppose to attend on such an injury, and to be capable, by its roughness, of attracting the blood, and inducing it to coagulate in the artery: on the contrary, the lesion was single. The external cellular coat, in virtue of its extensibility, yielded so as to allow itself to be stretched, nearly, perhaps, to the extent of an inch, thereby permitting itself to be drawn into a tube, narrowing like an hour-glass in the centre, in a manner that might, at the moment of its giving way, be imagined to have resembled a double cone, like an hour-glass, with the apices touching each other, and the bases at the remote lacerated extremities of the deeper coats. In the actual rupture, the stretched and torn filaments of the fine cellular tunic, drawn to a point and matted together, fell over the mouth of the vessel, smoothly and continuously, and without any aperture for the escape of the blood. The gush which would, otherwise, on the instant have taken place, was thereby arrested, filling the hooded bag in front, and producing that soft, bluish enlargement of the end of the vessel, so strikingly remarkable when first seen. This bag, by its softness, was then known to contain blood in a fluid state, and by its swelling out and pulsating with every stroke of the heart, gave evidence of being still in direct communication with the interior of the artery.

The stoppage of the hæmorrhage was here perfectly mechanical. I have little doubt that it was instantaneous also, being one of the consequences of the act of lesion in the vessel itself,

independently altogether of its sheath or other surrounding textures, all of which admitted of being removed from about it without diminishing the disposition and capacity of the vessel to prevent the escape of the blood, as even when so disembarassed from them, it admitted of being squeezed, and pulled, and turned in every direction, without giving issue to a single drop of that fluid. The only difficulty towards a belief in the instantaneous arrest of the hæmorrhage (and it is one urged generally against this theory), is that conveyed in the question,—where did the blood lost by the man come from? If the artery was hermetically sealed on the instant, why any hæmorrhage at all? I think that in this case, at least, there was no bleeding from the vessel. The emptying of the veins and arteries of the lower part of the limb, together with some blood, which must have flowed from the veins and smaller vessels of the stump, was sufficient to account for the quantity spilt; and I think that the vigorous state of the man, which enabled him, almost immediately after the accident, to walk down three ladders unassisted, the strength of his pulse, the heat of his body, and the character of the tremor which he laboured under being more that of fright than of loss of blood, also show that the quantity lost must have been so inconsiderable, that the main artery of the limb can scarcely have been concerned in its production.

Cases, like that of Samuel Wood* and others, may, however, be adduced in evidence, that serious hæmorrhage can follow the tearing away of a member, notwithstanding, as may be supposed, that a state of the principal artery, like that just described, has been induced; but all cases of the same accident need not be alike as regards this lesion. For example, if the laceration occurred at a point where a large artery was given off, the act of stopping the open mouth by a process of this nature might be but imperfectly accomplished. Or, if the vessel were firmly bound to any neighbouring resisting object, the same un-

* Philosophical Transactions, vol. xl.

favourable result might equally be expected. The state of health or of disease of the vessel would also influence the result very materially. Different arteries, even, are differently circumstanced as to structure, in a manner seriously to affect the consequences of such accidents. The external coat is more fully cellular or reticulated on the outside in some, than in others, and I think there is, in the axillary and brachial arteries in particular, a laxity in tissue of the surface of the outer coat, a freedom from intimate connexion to any closely adhering fibrous sheath, which disposes them more than most other vessels of equal magnitude to have their mouths sealed up in this manner, when torn across by violence. A comparison, in this respect, between the axillary, or brachial arteries, and the iliac or femoral, both as regards their anatomical bearings and the effects of such injuries on them, will fully bear out this observation. The former, which, from the nature of their cellular envelopes, roll about easily and safely in their beds, afford many instances of spontaneous cures after laceration : whilst the latter, being comparatively fixed and rigid, and enveloped closely by dense fibrous sheaths, to which they are connected by a short, fine, cellular tissue, have, when lacerated, so little means of reparation from this source, as almost necessarily to remain open, and to offer such facility for fatal hæmorrhage, as to leave but few instances of recovery for record in the annals of medicine. Every second case must here, as in diseases generally, have something new. The laws regarding them may be fixed, but the varieties are innumerable. Some may bleed much ; others only a little ; and others again, under the same kind of lesion, not at all : but in all such, the same laws must, more or less, be in operation in remedying similar lesions.

It may be added, that this theory of the spontaneous cessation of hæmorrhage from lacerated arteries, is both rational and intelligible ; for, when we take into account the very moderate amount of resistance which is capable of stopping the flow of blood from a divided artery, as ascertained by Mr. Guthrie and

others, we may readily conceive that even a trifling mechanical obstruction of the nature produced in this accident, and applied so directly over the mouth of the vessel, would be quite sufficient for the purpose.

The case which I have here detailed may, I think, be regarded as proving, what has been hitherto more a conjecture than a matter of certainty, at least as regards the human body, namely, that the external tunic is capable of itself, without contraction of the whole artery, and without even a coagulation of the blood in its mouth (phenomena usually considered essential to the success of the process), of arresting, on the instant, and both effectually and permanently, the escape of blood from an artery divided by laceration.*

ART. VIII.—*On the Swellings on the Head of New-born Infants.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A., &c.

[Read before the Obstetrical Society, Thursday, March 3, 1842.]

I PROPOSE occupying the attention of the Society for a short time this evening, with the consideration of the tumours which are formed on the head of the new-born infant, either during its passage through the pelvis or very shortly afterwards. At first sight the subject may appear insignificant, yet it is nevertheless of some importance, for these tumours are of great practical value in the diagnosis of the presentation and position of the child, and occasionally require special treatment. They have also been almost overlooked by English writers, and the foreign works in which they are described may not be accessible to all the members of the Obstetrical Society.

The only reference to these tumours that I have met with in British writers, previous to the commencement of the present century, is in Mr. Moss's treatise on the Diseases of Children,

* The preparation from which the above wood-cut was taken may be seen in the Museum of the Royal College of Surgeons in Ireland, marked B. c. 228.

1781. He speaks of "a swelling about the size of an egg, but of a round form," which "will sometimes be observed soon after the birth, upon the head of the child." He advises very little interference, except covering it with thin sheet lead wrapped in linen rag. We are neither to open it, nor to promote suppuration. It is clear from this statement that the author had met but the simpler cases.

Dr. Burns remarks, "Children may, especially after tedious labours, be born with a circumscribed swelling on the head. This seems to contain a fluid, and has so well-defined hard edges, that one who for the first time saw a case of it would suppose that the bone was deficient. It requires no treatment, or by applying cloths dipped in brandy, the effused fluid is soon absorbed. This, which is called hæmatocele, is generally on the parietal bone."* This description, as we shall see by and by, is both meagre and incorrect, and is calculated to lead the student to suppose that the ordinary tumour is hæmatocele, which is very rare.

One or two monographs have appeared on the subject in different periodicals, but which have not added much to our knowledge. I may, however, refer to a paper published by Dr. Francis Black, in the *Edinburgh Medical and Surgical Journal*, Jan. 1841, pp. 112, 125.†

By the older French writers the ordinary tumour is occasionally noticed, but the severe forms appear to have escaped their observations. Thus Levret (1761) remarks, that "the tumour, more or less considerable, which occasionally forms upon that part of the head of the child which presents, resolves itself ordinarily very promptly, as also do the contusions and ecchymoses which it may have received, provided they be not great or very extensive, which is rare."‡ Baudelocque, indeed,

* Midwifery, p. 652, ninth edition.

† Braithwaite, No. III. p. 170.

‡ *L'Art des Accouchemens*, p. 228.

and one or two of his disciples, allude to the sanguineous tumours, but without much detail.

Michaëlis, in 1804, published a paper expressly on the subject in Hufeland's Journal, and, as far as I know, he was the first to investigate, and carefully describe the severe class of tumours, to which Naegelè subsequently gave the name of cephalæmata.

Naegelè's observations were published in 1811*, and he not only investigated the nature of the tumours, but was the first to appreciate their diagnostic value, which he settled so accurately that recent observations have been merely transcripts of his conclusions.

Monographs have from time to time appeared, adding to, correcting, or confirming the previous observations, such as in France those of Mouillaud, Pigne, Dubois, &c.; in Italy those of Paletta and Moscati; and in Germany those of Henschel, Høere, Zeller, and others, which will be noticed hereafter.

After this brief historical sketch I shall endeavour, first, to point out the value of these tumours, as indicative of the presentation and position of the child, and as enabling us to submit our diagnosis formed before birth to an unerring test after birth. This I shall do as shortly as possible, and then we may enter into some detail as to their pathology and treatment.

After the liquor amnii has been discharged, the head of the child comes into immediate contact with the cervix uteri, occupying, or closing the partially dilated os uteri, the edges of which, according to the resistance they offer, press more or less firmly upon the scalp. If this circular pressure be considerable, it necessarily interrupts the cutaneous circulation, and after a time the portion of scalp thus enclosed is observed to swell, and become more or less tense; and if we examine the head after

* Erfahrungen und Abhandlungen, &c., 1812, p. 247; also in Zelle's Thesis, and in Journal Compt. de Diet. des Sciences Med. p. 227.

the birth of the child, we discover at this part a tumour of varying size and density. This tumour, without reference to its pathology, has been called by German authors, the *caput succedaneum*.

Now as the "presentation" is that part of the child which presents itself at the os uteri, and as the tumour is formed by the pressure of the edge of the os uteri, there can be no doubt that the situation of the tumour indicates the precise presentation: and, as in the different positions of the head at the brim, the situation of the tumour varies, whilst in each one it is invariable, it is equally decisive of the position when once its situation in each position is ascertained.

The various situations of the tumour have been ascertained beyond a question, first by Naegelè, and since by modern British and Continental writers, and I shall lay before you shortly the results, merely premising two observations: first, that the size of the tumour is in general in proportion to (as it is caused by) the delay and pressure at the orifice through which the head passes; and secondly, that the primary tumour is formed (as we have seen) by the os uteri, but that a second, and, as it were, a supplemental tumour, will result from delay and pressure at the vaginal orifice. If the part presenting there be the same as at the os uteri, the tumour will merely be enlarged, but if the position of the head be altered, the tumour will be extended in one direction or another, according to the part embraced by the external orifice.

In the *first position* the head lies across the brim of the pelvis in its left oblique diameter, with the posterior fontanelle towards the left acetabulum; the os uteri embraces part of the right tuber-parietale and the bone superior to it up to the suture, and in this situation we find the primary tumour, which, by the pressure of the lower outlet, is generally extended posteriorly, whilst it embraces more of the tuber-parietale.

In the *second position* the tumour is formed in the same situation, but upon the left parietal bone, i. e. on the superior,

and rather posterior part, including more or less of the tuberosity.*

In the *third position* I have found the primary tumour more anterior, or nearer to the anterior angle of the left parietal bone, than the posterior, but owing to the change from the third to the second position which the head makes in its transit through the cavity, the secondary tumour is extended posteriorly over the greater part of the tuber and the superior and posterior part of the parietal bone.

So in the *fourth position*, the primary tumour is formed anteriorly to the tuber, but at the lower outlet extended posteriorly.

In the *first position of face presentation*, viz. with the forehead towards the *left ilium*, “there forms,” says Naegelè,† “a swelling, first upon the upper part of the right half of the face, which in this species of face presentation is always situated lowest.” “But if the third stage advance slowly, the inferior half of the right side of the face, viz. part of the right cheek, will be remarked after birth as being the principal seat of the swelling.”

In the *second position of the face*,—the forehead towards the *right ilium*,—the left side of the face is the seat of the tumour, or of the red mark which indicates it; the upper part of the primary, the lower of the secondary tumour. I should mention that the situation of the tumour in face presentations is indicated rather by a red-coloured mark (the result of pressure), than by a defined swelling.

In *breech presentations*, “as in positions of the cranium, the swelling of the integuments is chiefly met with” on that part “which during the passage through the pelvis is situated lowest,” i. e. in the *first position* of the breech, or where the back of the child looks forward, it is on the right buttock, and in the *second position* on the left buttock.

* Rigby's Midwifery, p. 127.

† Mechanism of Parturition, Trans. p. 77-8.

This very slight sketch will, I trust, make it evident, even to the junior student, how valuable an acquisition the knowledge of the situation of the tumour is to our means of accurately ascertaining the presentation, and the various positions of the child. The information obtained by the finger before birth may be inaccurate, owing to various circumstances, but when the opinion thus formed is tested after birth by the situation of the tumour, our diagnosis will either be confirmed or rectified.

We may now turn to the examination of these tumours themselves, their nature, causes, and treatment, and it will be seen that they are by no means so simple or so uniform as might be supposed. The simpler ones are by far the most frequent, in fact it is seldom that we meet with the *cephalæmata*, as they are called: I have myself for some time past taken every opportunity of examining these tumours, and such information as I have been able to obtain I shall incorporate with that given by the authors whose works I have consulted.

1. The simplest and most common tumour, when laid open, will be found to consist of yellowish serum, effused under the scalp, and very rarely also beneath the pericranium. The scalp preserves its usual density, and the bone and pericranium are in a state of perfect integrity.

The tumour is formed during the passage of the head of the child, and does not increase after birth. It is limited simply by the pressure of the *os uteri* and *os externum*. For this kind of tumour no treatment is necessary, as very shortly after birth it loses its peculiar form, and after twenty-four hours often entirely disappears. If not, a spirit lotion, occasionally applied, will hasten its dispersion.

2. Occasionally, instead of simple serum, the tumour consists of sero-sanguineous fluid, owing probably to the greater amount of pressure, or the fragility of the blood-vessels, or to both. In such cases we find the scalp unusually vascular, with

small ecchymoses on its surfaces, especially the inner. In some cases I have also observed small ecchymoses upon the pericranium and the surface of the skull, but the bone is perfectly sound.

Most of these cases also subside without special treatment, or after the application of a spirit lotion ; but in some rare examples I have known inflammation to attack the tumour, followed by ulceration or abscess. This will be the more likely if violence of any kind have been used.

If we find inflammation arising, and the spirit lotion ineffectual, the best application is a soft warm poultice, frequently repeated. The same treatment will be the best in case of ulceration, at least at first, and afterwards some slightly stimulating ointment or lotion.

If an abscess form, of course the best plan is to evacuate the pus, by a free incision, followed by poultices. Fortunately these cases are very rare.

3. The third variety of tumour is the sanguineous, or cephalæmata, as they are called by Naegelè and others. The first writer who distinctly described these tumours, was Michaelis;^a he was followed by Naegelè,^b Zeller,^c Hoere,^d Schwarz,^e Gölis,^f Osiander,^g Chelius,^h Henke,ⁱ Rau,^j &c., Moscati and Palletta;^k and from the facts published by these authors, the Memoirs of MM. Pigne^l and Dubois^m were

^a Ueber eine eigene Art von Blutgeschwülsten, &c.—Loder's Journal, vol. ii. cah. 4. 1804.

^b Erfahrungen und Abhandlungen, &c., p. 247. 1812.

^c Thesis, Comment. de Cephalæmate. 1822.¹

^d De tumore cranii rec. nator. sang. 1824.—Siebold's Journal, vol. v.

^e Siebold's Journal, vol. vii. part 2, p. 440.

^f Pratische Abhandlungen, &c.

^g Handbuch der Entbindungskunst, &c.

^h Manuel de Chirurg. (Trans.) vol. ii. p. 186.

ⁱ Kinderkrankheiten, p. 148.

^j Handbuch der Kinderkrankheiten, p. 78.

^k De Abscessu sang. capit. mediol. 1810.

^l Journal Hebdom. Sept. 1838.

^m Nouv. Dict. de Medecine, vol. vii. p. 88.

written. M. Halmagrand, in his edition of Maygrier,^a and M. Velpeau,^b have also added observations of their own to the results previously before the profession. But by far the best essay I know, and one to which I have been largely indebted for the information I have the honour to lay before you, is that of M. Valleix, formerly "*interne*" at the "Hôpital des Enfants Trouvés" in Paris.^c

The simplest and most general division of these tumours, which are essentially of the same nature, is, according as the blood is effused immediately under the scalp, under the pericranium, or within the skull. Chelius and Hoere describe cases where the effusion takes place in the diploe of the cranial bones.

1. *Sub-aponeurotic Cephalæmata*.—This is the simplest but apparently not the most common form of sanguineous tumour, as in about 500 new born children, M. Valleix observed it but twice, and neither Naegelè nor Zeller allude to it. It has been described by Baudelocque,^d Velpeau, Dubois, &c. The blood is effused immediately underneath the cranial integument. It is probably owing to the violence of the labour, and sometimes to external violence. In most cases, it is promptly dissipated.

2. *Sub-pericranial Cephalæmata*.—This appears to be the most common form of the sanguineous tumour, though after all it is rare. M. Naegelè met seventeen cases in twenty years' practice, and it is the only kind described by him and Zeller. Hoere thinks it tolerably frequent. Palletta found but a few cases in a great many children. M. Baron estimates its occurrence at about 1 in 500 children.^e M. Dubois, during a number of years at La Maternité (where from 2500 to 3000 children are born annually) has seen but six cases. M. Velpeau refers to five cases, and M. Valleix^f met with 4 cases in 1937 children

^a Page 551.

^b Traite des Accouch., p. 510. Ed. de Bruxelles.

^c Mal. des Enfants, p. 495.

^d Art des Accouch., part i. ch. 2, sect. 11.

^e Dict. de Med. Art. Cephalæmatome.

^f Mal. des Enfants, p. 500.

in five months at the Hôpital des Enfants Trouvés, or about 1 in 387. So that the calculation of M. Baron is probably not far from the truth.

According to most writers, the tumour is seated about the posterior and superior angle of the right parietal bone, or nearly in the situation of the tumour in the first position; and when small it is placed above, and distinct from the tuber parietale. It is occasionally, but rarely, met with on the left parietal bone, and still more rarely in any other situation. Ordinarily there is but one, but sometimes we may observe one on each parietal bone, separated by the sagittal suture. Naegelè has, however, mentioned a case where a greater number were found. Of six cases seen by M. Valleix, three were on the right parietal bone, two on the left, and in one there was a tumour on each bone, but which, he states distinctly, was not the result of the blood passing across the suture.

The size of these tumours varies from that of a small nut to a swelling occupying the whole parietal bone. In the case of double tumour, related by M. Valleix, they were the size of an apricot kernel; in two others they covered seven-eighths of the parietal bone.

There is no proof of these tumours existing before the completion of labour; if we make an examination some hours, or a day, after birth, we find a small tumour, slightly tense, fluctuating, and on pressure from the edge of the tumour inwards we can feel the bone entire. In rare cases the integuments are of a deep red colour, and slightly œdematous,* and still more rare is it to find a pulsation in the tumour, although Naegelè states that he did so in two or three instances.

But the most striking peculiarity of this variety is a bony circle,—“*cercle osseux, bourrelet osseux*,”—which is formed around the effused blood, and limiting it. Palletta has mistaken this for the edge of an opening through the cranium, and

* Valleix, *Mal. des Enfants*, p. 502.

to this distinction he attributes the formation of the tumours. However the bone, as Valleix remarks, can be distinctly felt uninjured within this bony ridge, if we pass the finger from the outer edge inwards to the centre.* Michaelis states, that the bony circle may be felt from the commencement of the tumour; but in this he is not borne out by the researches of Naegelè, Zeller, Høere, and others, who examined with great care. M. Valleix says, that in two cases which he saw only at an early period, he could not detect it: in one it had just commenced, and in a fourth it had not at first attained its full development, but it did afterwards. Wigand relates two cases in which no circle could be felt until twenty-four hours after birth; and M. Fortin,† one in which no circle was present immediately after birth, but which was formed within two days. From these facts we may conclude that it is not present at the commencement of the formation of the tumour, but that it is a subsequent production. It is very perceptible to the touch when found, surrounding the tumour entirely, except when it is over the sutures.

The tumour rapidly acquires its full development, sometimes in a few hours, sometimes in a day or two, and at each time we find it of different sizes in different cases, tense, rounded, defined, elastic, and with fluctuation almost always perceptible. Generally speaking, the colour of the skin is unchanged, and it is neither ecchymosed nor œdematous, though there are exceptions. No alteration of the volume is produced by pressure made upon the tumour, nor does it cause stupor, coma, or convulsions, and according to Valleix, it is quite consistent with the health and thriving condition of the child. Paletta states, that the size of the tumour continues to increase until it is opened, but this is not the case: it may increase until the bony circle is formed, but this appears to determine its extent.

* Valleix, Gaussail.—*Presse Med.* 1837, No. 54.

† *Cephal. sous-pesicran.*—*Ibid.* No. 39.

Diagnosis.—These sanguineous tumours have been mistaken for hernia cerebri, and perhaps this is the disease with which they are more likely to be confounded. MM. Ledran and Corvin made this mistake, as was subsequently pointed out by M. Ferrand.* And yet the differential symptoms are sufficiently marked, for in cephalæmata there is always fluctuation, which is not present in hernia cerebri: in the latter there is always pulsation, but never in fully formed cephalæmata, and very rarely indeed even at the beginning. In hernia cerebri the perforation in the skull may always be felt, whereas in cephalæmata, by a little care we can always (with only one or two exceptions on record) feel the cranium beneath the tumour. In hernia, compression gives rise to symptoms of cerebral pressure, but not with cephalæmata; and lastly, cephalæmata almost never form upon the sutures, whereas this is the most frequent seat of hernia cerebri. In a case related by Fried, hernia cerebri occupied the occiput, and a sanguineous tumour on each parietal bone.†

As Dubois observes, there is no danger of confounding cephalæmata with hydrocephalus externus, and the osseous circle will distinguish them from the aqueous cysts mentioned by Zeller. Hœre mentions in his Memoirs, a case of fungus of the dura mater, but this disease is so rare in infancy (if it ever occur at so early a period) that we run no risk of mistaking the one for the other.

Valleix relates a case of abscess of the scalp circumscribed by a thickened condition of the cellular membrane, which had considerable resemblance to the osseous circle, but the previous history differed considerably; for abscess is not formed so soon after birth, makes slower progress, is irritable and painful, and the condensed cellular membrane does not form so hard a boundary as bone.

The ordinary caput succedaneum is softer, pitting on pres-

* Mem. de l'Acad. de Chir., vol. v. p. 47.

† Extract de Thesis de Haller, vol. i. p. 110.

sure, but not fluctuating, not so defined, without the bony circle, and is speedily dissipated. The sub-aponeurotic cephalæmata are more rapidly formed, the skin is discoloured, the tumour is sometimes painful, but not circumscribed, and without the bony circle. M. Dubois saw in the same child the sero-sanguineous tumour, the sub-aponeurotic, and the sub-pericranial cephalæmata, the coexistence of which would of course embarrass the diagnosis.

3. *Sub-cranial Cephalæmata*.—This variety is extremely rare. Høere was the first to describe it,* and since then MM. Moreau and Dubois† have detailed each a case. M. Baron states that he has seen several,‡ and M. Padiou showed to M. Valleix the parietal bone of an infant, which had been the seat of one.§ M. Valleix has found the dura mater separated by effused blood, but which was not limited so as to form a tumour.

The blood is stated by Chelius and others to be effused into the diploe of the cranial bones; by others, on the external or internal surface of the dura mater.

Causes.—It would be useless to occupy time with the various causes which have been assigned for the production of these tumours. I feel no doubt that M. Valleix is right in concluding that they do not exist before birth, but are the product of force employed in the delivery. The circular pressure of the os uteri, according to its intensity, will produce either simple discoloration of the skin, a serous tumour, or sanguineous effusion, to which, in the sub-pericranial cephalæmata, is added an imperfect bony circle as a subsequent production.

Pathology.—In describing the appearances in sub-pericranial cephalæmata, discoverable in dissection, I shall give the substance of M. Valleix's researches, which are by far the most minute and accurate of any.

* De Tumore Cranii, &c.

† Dict. de Med. Art. Cephal.

‡ Dict. de Med. Art. Cephal.

§ Mal. des Enfants, p. 512.

The scalp has generally its natural aspect, although Oslander and others speak of its being red or livid. Its substance is always uninjured. The pericranium preserves its transparency, and through it is perceptible the deep colour of the effused blood. M. Dieffenbach* has noticed a thickening of the pericranium, which is confirmed by M. Valleix. At the circumference of the tumour the pericranium is adherent to the bony circle, but it is never ossified itself, according to M. Valleix, although Chelius has found it so. According to M. Valleix, the effused blood is enveloped in a sac formed of a fine membrane, having all the characters of condensed cellular tissue, around which he observed an adventitious tissue, consisting of a cartilaginous plate, varying from a line to half an inch in breadth, and about half a line in thickness, gradually thinning externally. It is placed on the bone, from which it is easily detached, and underneath the pericranium, to which it adheres more firmly, but from which it can be detached, leaving the membrane in its natural state. In the under surface of the cartilaginous points of ossification may be observed.

The state of the bone underneath the tumour has been differently described by different authors. Michaelis and Paletta, who attribute the affection to disease of the bones, think that the outer table of the bone is necrosed, carious, and destroyed, and that the injured vessels of the diploe give rise to the hæmorrhage. Naegelè, Zeller, Hoere, Valleix, and others differ from this view, and this opinion is founded upon examinations made after incisions have been practised and after death. Valleix found part of the surface smooth, but sprinkled with numerous irregular osseous rugosities, very difficult to be detached, but neither carious nor destructive.

The bony circle always surrounds the tumour entirely, except when it is seated near to the suture: it consists of a bony ridge placed upon the bone, from which it may easily be de-

* Abscessus Capitis Sang. Neonat.—Rust's Magazin, 1830.

tached, exposing the parietal bone unaltered. It appears of different degrees of consistence, according as the process of ossification is more or less advanced. Its height varies in different cases, and in different parts of the circle, varying from half a line to a line and a half.

Terminations.—Velpeau gives the following statement from Naegele as the process of cure :

“ 1. The detached pericranium becomes ossified on its internal surface.

“ 2. In proportion as the effused blood is absorbed, the ossified pericranium approaches the cranium, and at length is united to it.

“ 3. After six months, or even a year, we may still remark an elevation at the place where the tumour was situated.

“ 4. In children who died six months or a year after, M. Naegelè found, on making a section of the parietal bone, that it was much thicker at the situation of the tumour.”* M. Valleix states, that in one case the bony circle gradually increased internally, until it nearly occupied the whole extent of the tumour, and that the fluid disappeared in the same degree.

The tumours, if untouched, are rarely cured within forty days ; they may, however, disappear, though not often, without opening, and in the majority of cases there is no danger.

Treatment.—I have already stated that for the simpler forms nothing beyond cold lotions or spirit wash will be necessary, unless ulceration take place, or an abscess form. The same treatment may be tried in the sub-aponeurotic cephalæmata, and will generally succeed. Even the sub-pericranial tumours may be dissipated, according to Gölis, Rau, Halmagrand, and others, when slight. The latter author speaks highly of a lotion of the hydrochlorate of ammonia in red wine. Others recommend the usual cold and spirituous lotions. Henschel recommends pressure.

* D'Art des Accouchemens, p. 512.

If these means fail, and they will if the tumour be large, it will be necessary to make an opening into it. For this purpose Moscati and Paletta passed a seton through the tumour to provoke suppuration, on the supposition that the bone was diseased. Gölis of Vienna establishes a slight issue on the top by means of caustic potash, in hopes of promoting absorption; and he cites thirty-two cases of cure by this means, in from eighteen to fourteen days; but Zeller throws great doubt upon some of these; Krukenberg and Schmitt, however, adopt Gölis's plan. Löwenhardt recommends puncture with a trocar, and strapping. By far the simplest mode, however, is to make an incision with a bistoury, sufficiently ample, according to the size of the tumour, and by most writers this plan is preferred. The wound may be dressed with charpie, according to Chelius, or with spermaceti cerate; or, when the blood is evacuated, a strap of plaster may be passed across it. The simpler the dressing the better. I may remark, in conclusion, that we should take care not to make the incision near any of the principal arteries of the scalp.

ART. IX.—*Memoir on an Epidemic Religious Ecstasy which prevailed in Sweden in 1841 and 1842.* By Dr. C. V. SONDEN, Physician to the Lunatic Hospital at Stockholm. Translated from the Gazette Medicale.

THE singular malady which manifested itself at the end of the year 1841, and which, especially at the beginning of 1842, spread itself among the inhabitants of the country of the central part of the kingdom, assuredly deserves to be transmitted to posterity, considering that it was not an accidental and isolated phenomenon, but provoked by an assemblage of many causes, known or unknown, and acting slowly and simultaneously; it ought to be considered as one of the partial eruptions of the

epidemic, which, under the name of St. John's dance, Chorea St. Viti, made such terrible ravages during the middle ages. A complete history, however, of the aforesaid malady, must not be expected, since it is not yet over, nor even a detailed description of all its peculiarities, considering that I was not myself an eye-witness, and that I have had no other source of information than the official reports; but I dare hope, that the sketch which I am going to present, will not be in any essential point, either erroneous or incomplete. "It seems well to deserve the trouble," says the celebrated Hecker, in the preface to his historical work on the malady in question, "to describe diseases which propagate themselves on the rays of light, on the wings of thought, and which move the soul by the irritation of the senses, and spread themselves miraculously in the nerves, those paths through which penetrate the will and sentiments of man." I should have wished to have extracted from his remarkable work the most essential part of the history of this disease during the middle ages, quote the frightful descriptions which it contains of the dancers of St. Gui and of St. John, in Holland and the Rhenish Provinces, in 1374, the analogous horrors of the "Tarentisme" in Italy, the "Tigretier" among the Abyssinians, the similar malady become indigenous in the Shetland Isles; as also like phenomena in like periods, such as the excesses of the "Convulsionnaires" in France, of the English and American religious fanatics; but to avoid too great prolixity, I feel myself forced to refer the reader to this work*, as to a profound history, and an interesting reading, supposing the reader yet unacquainted with it; I pass at once then to the description of the malady. In general this form of singular and epidemic malady, was distinguished by two prominent and remarkable symptoms; one physical, and consisting in a spasmodic attack of involuntary contractions, of contortions, &c.; the other mental, consisting of an ecstasy more or less involuntary, during

* Die Tanzwuth, Eine Volks-Krankheit Im Mittelalter; Berlin, 1832.

which the patient believed he heard or saw divine, supernatural things, and felt forced to speak about them, or, as the people said, to preach; occasionally, one or other of these symptoms varied a little in particular cases. The variations were, however, so insignificant, that one always understood that the symptoms were, at the bottom, the same. The spasm consisted essentially in convulsive starts, contortions, hideous or ridiculous, disfiguring the muscles of the face, of the body, especially of the extremities, oftenest of the shoulders, sometimes bounds and leaps, often so impetuous that the patient could not keep himself seated on a chair, nor remain in his bed. But the disease was not observed to be accompanied by any mania to dance, nor any semi-paralytic symptoms such as we observe in ordinary choraë. Every thing which affected the mind or the fancy of the patient in a disagreeable manner singularly provoked or augmented these contortions. A single word that the patient regarded as impious, even when it had been pronounced in an innocent manner, and only *en passant*, instantly occasioned these contortions. Besides this, they occurred at irregular intervals, generally when astonished strangers found themselves present, without that not so often, rarely when the patient was alone, and scarcely ever at night. I do not know that any patient complained of having felt pain, except a woman who was attacked with this disease the first, a case the details of which are perfectly well known. Some experienced certainly a little indisposition during the precursor signs; but the greater part did not feel any illness during the access, they appeared to be, on the contrary, as well as they ever were. The people looked on the spasm as an infallible sign of the presence of the Holy Ghost in the body of the sick man, and as a proof of the deformity of the sin.

The mental symptom was characterized by a more or less complete alteration of the habitual use of the senses, with which the patient was attacked suddenly in the state of wakefulness, by the want of a clear idea of his existence and of his personal free-

will so that the natural chain of the functions of the mind is interrupted, whilst the activity of the imagination is exalted to an extraordinary degree, or at least is exercised exclusively, which causes the patient to believe that he lives in another sphere than that which surrounds him. This activity is manifested by an irresistible loquacity, and by a constant mania of wishing to preach the word of God, by visions and by prophecies. This access also followed at irregular intervals, and was most frequently preceded, accompanied, and succeeded, by symptoms of spasm. Most physicians who have witnessed these paroxysms have likened them to somnambulism, or magnetic sleep, without any of them being able to declare positively that the aforesaid paroxysms belonged to that state. The discourses or sermons always turned upon religious topics, as the popular denomination of "preaching disease" shows, they were exhortations to sinners to be converted, condemnations levelled against every kind of immorality, drunkenness, oaths, &c. ; but the rage of the preachers was oftener directed against perfectly innocent pleasures, such as dancing, simple games, or against objects of dress, as brilliant combs, buttons, ear-rings, red cloth, and other trifles ; the sick often spoke of visions which they had had of heaven, hell, angels, &c. ; they also predicted the end of the world and the last judgment, or the day of their own death, always with the pretence of making their predictions pass for holy prophecies, which, however, had all the common defect of not being fulfilled ; and generally, every thing they said in this state of ecstasy, they gave as immediate inspirations of the Holy Ghost. However complicated the exposition we have just given may appear, it is incontestable, and constituted a single disease, whether called ecstasy, vision, magnetic state, or whatever you will. During the paroxysms, the eyes of the patient shone with extraordinary lustre with frequent side glances. The most extraordinary gesticulations accompanied the declamation ; the imagination was not, however, always exalted ; every time it

was so the delivery was of an original kind, whatever the sermon was, or it more generally happened, that it was full of maledictions and menaces of hell. Otherwise, the natural functions of the patients were discharged with normal regularity, as the appetite, the evacuations, sleep, &c. But the accesses left after them much weakness and exhaustion. In the generality of cases, it was not possible to state the distinct periods, for the paroxysm more generally manifested itself suddenly and nearly in all its intensity, as if by enchantment. Preludes, however, sometimes shewed themselves of longer or shorter duration, which consisted in a strong sensation of inquietude or of repentance, an oppression or slight pain in the head and the limbs, difficult respiration, loss of appetite, suffering and burning feel in the chest, and a disposition to fainting or slight swoons, general uneasiness, a commencing incapacity of voluntary motion of the head, the arms, and legs, a capricious temper, &c. The face alternately reddened and grew pale, the expression of the eyes changed and became generally more lively. The eruption of the disease manifested itself by spasms and the mental ecstasy above mentioned, with an irresistible inclination to preach ; during these accesses, the patient declared that he was quite well, even better than ever.

Several degrees of intensity of the paroxysms have been observed. I think two sufficiently distinct, one moderate and the other stronger. They resemble each other, however, in essential points, that is to say, that in both cases the patient felt the same spasms, the same irresistible inclination to preaching, the same belief in the immediate influence of a supreme power. The more severe state was that in which the patients found themselves after an attack of convulsions, when they suddenly fell down senseless, or, according to an eye-witness, almost as if they had the falling sickness, and remained for a longer or shorter time in a state of exhaustion, or deprived of sense ; during the attack, they were sometimes perfectly tranquil,

and as if in a profound sleep; sometimes they had continued contortions, struck their hands, sighed, smiled, and so forth; then they regained the use of their senses, as if they awoke from a dream, and related that they had had supernatural visions and uttered prophecies. So far the discourses of the ecstatic preachers always bore on the same subject, to wit—religious topics, visions, and prophecies,—they saw the place of punishment of the condemned, and the repast of the elect at the table of God, they predicted the end of the world, and so forth,—one sees that this state is essentially the same as the lesser degree of the disease. On the other hand it would be wrong to regard mental diseases of other kinds, as mania, melancholy, and madness, into which these patients sometimes fell, as higher degrees of the same malady. This, therefore, had degenerated from its true origin, and had become another disease of the mind, of a particular character, generally chronic. It was believed possible to recognize two distinct forms of this epidemic, viz., a physical and mental chorea. Without wishing in any way to contest the justice of this observation, inasmuch as there have been cases where the spasmodic symptoms have manifested themselves to a predominating or exclusive degree; and others, where the mental symptom has declared itself alone, or has had the preponderance, it appears more reasonable, and more conformable to experience, to consider these different symptoms as variations of the same morbid state (since they depend on the same epidemic influence), as diseases specifically, or even generically different.

The disease commonly attacked young people from 16 to 30 years old; often also children from 6 to 16 years. The greater number were women, but men also were attacked, although they rarely succeeded in attracting attention as preachers, which is as much as to say, that they were less exalted, or less foolish. The greater number of the sick appertained to the poorer class of people; however, it was not without example to

find cases of the disease among persons of the educated classes. Among some the spasmodic symptoms prevailed, in others the mental symptoms had the preponderance; some completely wanted one of these symptoms. In moderate cases, the patients had the strength to resist the attack and to repress it, their will being yet sufficiently strong for that, and the accesses then reappeared quicker; in cases, on the other hand, where the disease had a more developed form, the will was weak or governed by the pretended spirit, and where the symptoms were visibly aggravated by repressive measures, they continued weeks or months entire. All caught the disease by what may be called a mental contagion, that is to say, in hearing or looking at some woman attacked with the disease of preaching; (some even pretended that it was only necessary to hear a similar scene of preaching spoken of, to be attacked with the same malady, which some physicians, ocular witnesses, loudly declared that they doubt;) but it has not been shown, that the disease had broke forth otherwise in the whole number of patients, with the exception of the first who was attacked with it, and of whom it may be said, not without reason, that she had got it in consequence of over-reading religious books. During a long state of languor which had kept her in bed many weeks, she had done nothing else but read the Bible, the Psalter, and other religious books, till at length the disease declared itself. During a year that this mental epidemic reigned, several thousand persons were attacked by it, and, it may be presumed, that many others will be so again. Now that the disease still continues to be propagated, although less strongly, and visibly diminishing in intensity, it is yet too soon to try to work out the history of its development, or even make statistical tables of the number of sick; and I am afraid it will always be impossible to furnish the exact number; for, as well as I know, there do not exist on this head official reports by which one may be guided. The reports sent to the Royal College of Medicine, and which they were kind enough to

communicate to me, only exhibited 300 cases, which scarcely amounts to the sixteenth or twentieth part of their total number. It is generally acknowledged, and has been often stated, that interested views, the desire of making a noise, and of passing for a saint, have in this instance, as well as in similar cases, caused impostors to spring up, who simulated or feigned the disease. The intelligent reader will easily comprehend, even if the remark were not made, that the contents of the sermons gave no support to their pretensions to a divine origin ; but that they were, on the contrary, foolish, meagre in ideas, often filled with pure nonsense, yet oftener with exclamations repeated to satiety, and constant recapitulation of the same absurdities, delivered with a sententious tone.

It was only the most ignorant and superstitious of the people who allowed themselves to be led by a stupid admiration which the slightest efforts of reason, the first appeal to true religious feelings, must have dissipated. However, the concourse of hearers of the rank of peasants was so great, the blind exaltation and fanaticism among those who ought to have been regarded as reasonable, had increased so much, especially at the beginning, that the crowd was seen passing in thousands to the cabin of the individual who was preaching, and it was not without example, that ecclesiastics, officers of justice, and physicians, have been driven away by the fanatics with blows of cudgels and stones, so that with reason, violent proceedings capable of compromising public safety and order were apprehended,. It was only after the united efforts and active vigilance of an enlightened clergy, of the government of the province, and of the physicians, that they succeeded in convincing the inhabitants of the true nature of this phenomenon, that is to say, that it was a *disease*, and to bring them back to reflection and tranquillity, and to the shame of having shown so much credulity and stupidity, as well as to make them take remedies proper to cure the disease. However, it is to be feared, that so many cares and efforts united would have produced very little effect, without the lucky

circumstance, that the prophecies so often repeated and announced, as about to be accomplished in a few days, were not fulfilled, which brought about, that the most reasonable among the inhabitants were soon gained in favour of the good cause.

We admit, as appears to us, on sound physiological principles, that the vegetative and sensitive, or, in other words, the corporeal and spiritual lives, compose together in man an inseparable whole, although in their external manifestations they appear often to diverge to such a point, that to the eyes of the observer, they present themselves almost as independent one from the other. It is sufficient to observe, that man is affected, and that his condition is modified in turns by mental and physical influences; that on one hand, extraordinary or violent mental impressions may provoke morbid alterations in the vegetative life, and, on the other, that irregular vegetative functions are capable of causing derangements and diseases in the sensitive life in proportion to their greater or less relation with the organs of this life. We are then led to consider separately the mental and physical causes, which may be regarded as the origin of the disease in question, for in fact it seems that it may be established in this case, as in many others, that it is not exclusively a single circumstance, for instance, the ergot of rye, the perusal of religious books, or reveries on matters of religion, or any other particular cause, which can have provoked so singular a phenomenon, but that many circumstances together have concurred to produce it. To avoid too great prolixity, I will not quote here all the causes looked upon as generally predisposing to mental diseases, but I will confine myself to the causes which have particularly excited among us the above named religious ecstasy.

We must consider, first, as a remote cause, the education of the people, which embraces no object of higher interest than religious instruction. Even in places where education is found in a satisfactory state, and where there are no fanatics to mislead the mind, it is always confined within sufficiently

narrow limits, and in consequence, this instruction may be easily corrupted by incredulity, imposition, or fanaticism. It is an undoubted fact, that phenomena such as those in question were only manifested previously among the least enlightened class of the people; it is also equally true that in the places where the disease began, the minds had been a long time previously disturbed and exalted by particular sermons and exercises of devotion of self-called preachers and other sectaries, rendered fanatical by millions of fanatic pamphlets, composed by the Murbecks, the Nymans, and many others. Finally, that much mental mischief had resulted by a neglected or erroneous religious instruction, the fault of the proper servants of the Church. It appears therefore evident that we must look for the essential cause of the disease and the most powerful one in this predominating disposition of the mind. M. Ponten, an enlightened ecclesiastic, who has himself, during forty years, treated lunatics in his own house, and precisely in the locality where the disease broke out, attributes to the great activity of these preachers, not only that private individuals have fallen into religious melancholy, but also mentions emphatically the circumstance, "that the number of patients attacked with mental alienation has visibly increased during late years." The same testimony has been given by other enlightened persons and by public journals. If we also take into account the efforts latterly made by apostles of new doctrines to shake the ancient faith, to agitate the minds, to sow doubts and spread intolerance between individuals, it must be agreed that at this period there really existed more materials than enough to excite fanaticism, and even ecstasy. No very strong or extraordinary impulse was necessary to push the prevailing extravagance to a true state of madness. Such an impulse, however, did arrive, when a young girl, irritable and sensitive to a degree, became devotedly exalted by frequent perusals of the Bible and other religious works, and finished by falling into a state of ecstasy at the end of a long

nervous illness. Then the epidemic with the rapidity of lightning fired the mass already long heated, and spread itself with an astonishing rapidity. Many individuals became completely affected; a great number experienced more or less well-marked symptoms of the disease; and all the inhabitants were imbued with a spirit of fanaticism if not infected with this mental epidemic. It is certainly very rare that the cause of a mental malady is exhibited to the eye in a more distinct manner. The fanatic disposition of mind may then be admitted as alone sufficient to explain the origin and the rapid propagation of the disease. Besides this, it would not be right to omit that both drunkenness and the use of bad food, rye affected with the ergot (*secale cornutum*), were also assigned as causes of this disease, and not without some reason. With respect to the first, the very general use of alcoholic liquors, with its usual inevitable consequences, the activity of the soul paralysed, the corporeal strength and the faculty of labour destroyed, morality sullied, order disturbed, the well-being and the happiness of families dissipated, and every sentiment of honour and virtue lost, and, finally, its slave dragged down below the level of the brute. Then, on the other hand, the violent revulsion produced by the exhortations of austere ministers inducing a sudden disuse of the habitual stimulant, became too much for the weakened mind torn by the stings of conscience and remorse, and not only despair, but mental alienation was induced. As to the second cause, viz. the use of bad food, there is more room for doubt. During the last few years the harvests had been very bad, and the nourishment of the peasantry in consequence scanty and unwholesome, and it is possible, that the feeble state of the body thus engendered, may have rendered the mind less able to sustain the shocks of sudden excitement; but that the ergot of rye contributed in an essential manner to this is most unlikely.

One fact is certain, that, as has been already said, it was chiefly persons in youth, for instance, from the age of 16 to 30,

that were attacked with the disease, then children, and that the smallest number belonged to manhood or old age. It is equally certain that the greatest number of patients was composed of young girls and young women. As to the corporeal constitution, the temperament, and to the disposition of the individuals, no rule can be established, for every qualification of this kind was swallowed up in the stormy and devastating whirlwind of the epidemic when it had once broken out.

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Cataract, and its Treatment, comprising an easy Mode of dividing the Cornea for its Extraction, and appropriate Means for removing the different Forms of that Affection.
By JOHN SCOTT, Senior Surgeon to the Royal London Ophthalmic Hospital, &c. &c. Churchill, 1843.

THE object of this treatise is to advocate a new-fashioned knife for the division of the cornea in the operation of extraction, which its inventor is of opinion will obviate the spasm of the recti muscles, induced by the force necessarily employed in making the punctuation with the instruments now in general use; and which by compressing the iris between the hard lens and the side of the knife as it is passed through the chamber, sometimes produces such inflammation as causes one of the most frequently inflammable results of the operation. To exhibit this knife (which we will presently describe) is the direct aim of this tract; and the whole of the remaining portion might be disposed of in a summary manner, but that the observations of a man of practical experience, so long attached to the first ophthalmic institution in Great Britain, although upon subjects already ably handled in the various manuals of ophthalmology, must be received with interest by the surgical profession generally, and read and studied with marked attention by those who practise this branch of knowledge specially. Many of the opinions throughout this little work, and the peculiarities of the modes of operating observed in the London Ophthalmic Hospital have been already put forward, tested by long experience, and ably advocated by the late lamented head of this institution, Frederick Tyrrell, and we will therefore confine our remarks to Mr. Scott's observations on the extraction of cataract, and the improvements proposed by his method of operating.

While reading over the commencement of this little work, a passage, apparently of trifling moment, attracted our attention, not for any great practical import in itself, but on account of its applicability to the usual hospital practice in this country.

“Some have advised,” says Mr. Scott, “that the pupil should be dilated by belladonna before proceeding to the extraction of a cataract, but I see no advantage from doing so in ordinary cases, for as soon as the aqueous humour escapes, the influence of the belladonna on the iris is lost, the pupil contracts, and falls against the edge of the knife, but the irritability of the iris is lessened, and it does not so readily recede behind it on pressure; and the pupillary margin is more liable to be divided by its edge in the dilated than in the contracted state. If the pupil be naturally very much contracted, or if the anterior chamber be very small, it may be necessary to dilate the pupil, to allow of the ready transit of the lens in the former case, and in the latter to take the iris out of the way of the knife.”

It is, or at least it was the practice some years ago, to dilate the pupil fully before the operation of extraction was performed, in the general surgical hospitals in this city,—a practice as dangerous as it was common.

Mr. Scott strongly recommends the recumbent posture, in the operation of extraction, in which the patient is always placed in the London Ophthalmic Hospital, and says, that it

“Is so conducive to the success of the operation, that it should never be dispensed with; not only does it obviate the most effectually any unsteadiness on the part of the patient, but it also allows the surgeon to rest his hand in a much more easy and convenient position, and enables him to perform the section with greater precision; at the same time that it prevents the escape of the vitreous humour to any deleterious extent, for it cannot gravitate out of the eye in this position, and the muscles of the globe will not contract sufficiently to evacuate more than one-third of its contents.

There is but one opinion expressed in this extract from which we would dissent, it is that of the recumbent posture preventing the loss of any part of the vitreous humour; we have seen this body, or at least one-half of it, as frequently lost while in the recumbent as while in the erect posture, and the upper section of the cornea now used by the most dexterous operators, and that employed by Mr. Scott himself, will naturally assist to retain the vitreous humour from being lost by mere gravitation, unless it be in a previous morbid or fluent state; except in such cases, we believe it is generally lost in whole or in part by spasm of the eye, and not by mere gravitation.

Practical men are apt to receive with distrust any newfangled instruments where the old ones achieved the purpose without difficulty, and the instruments to which men's hands are made naturally become favourites; moreover, the remodelling of instruments is often laid hold of as a means of puffing and quackery, of which we have had many instances of late in those invented

for the cure of strabismus. In the early days of ophthalmic surgery, cataract-knives became a fruitful source of discussion, and a favourite theme for writing upon; upwards of twenty-four of these instruments of various shapes and sizes have come down to the present time, from the days of Daviel to those of Beer. Several of these will be found in the older writers upon oculistic surgery, and a great variety have been lately figured by Blazius in his "*Akiurgische Abbildungen*," in 1833, and discussed by Jüngken in his "*Augen Operationen*." All these have, however, since the commencement of the present century, merged into the lancet-shaped knife of Wenzel, and the triangular one of Beer, which became the orthodox instruments for the division of the cornea both in Europe and America; there have been, it is true, slight alterations made upon the more generally used knife of Beer, as, its having a sharp and slightly convex back in that recommended by Rosas, and a greater breadth of base in that by Tyrrell, &c. &c.; and some years ago Jäger attempted to modify the knife of Beer by adding a sliding blade, likewise of a triangular form, intended as well to protect the iris as to steady the globe during the reversion. Mr. Guthrie has got the credit of constructing a double knife upon Jäger's principle with one blade of silver, but it has long since become obsolete; and so with these two innovations, or rather this one innovation, the instruments already alluded to of the Austrian and Italian oculists, particularly those of the former, have remained the favourites till the date of the present one, proposed by Mr. Scott. We here quote for the benefit of our readers the author's objections to all other extraction knives, and to that of Beer in particular, as it is the one in most general use:

"It will be observed that the cornea-knives usually employed, not only increase in thickness and in width from point to heel, to fill up the aperture they make in the cornea as they traverse the anterior chamber, and thus prevent the escape of the aqueous humour, but their width is also equal to the radius of the cornea, so as to make a section of that size in the membrane; and this is done by thrusting this wedge-shaped instrument through the cornea, the cutting edge of the knife effecting its division by means of the force with which the back of the instrument is pressed against the opposite margin of the wound. This forcible thrusting of a wedge-shaped instrument of such dimensions through the anterior chamber appears to me to be productive of many of the difficulties as well as the dangers that attend the operation. Thus the force employed tends to turn the eye inwards to the nasal canthus of the orbit, whereby the inner side of the cornea is obscured from the view of the operator, he is unable to puncture it close to the sclerotic margin, and consequently the section is too small for the escape of the cataract.

“ If this inversion of the eye is prevented by pressure on the nasal side of the globe, the aqueous humour is liable to escape before the knife has traversed the anterior chamber far enough to prevent the iris from being wounded in completing the section ; and even if the knife be so far advanced that the iris cannot escape beneath its edge, the pressure necessarily exerted on the globe often induces such violent spasm of the muscles as to endanger the escape of the vitreous humour, and to subject the iris and the internal tunics to so much pressure as to lay the foundation of serious inflammation.

“ Sometimes the spasm thus induced will not subside after the extraction of the cataract, and then the iris may be pressed forward and prevent the closing of the flap of the cornea ; under these circumstances it is necessary to puncture the hyaloid membrane and allow a small quantity of the vitreous humour to escape, unless it should subside spontaneously, after waiting a reasonable time for that purpose. This proceeding may be adopted with perfect safety if it be conducted with great care, the patient being in the recumbent posture. Sometimes, when the vitreous humour escapes, in consequence of the spasm of the muscles of the globe, a portion of the hyaloid membrane may be left protruding through the section of the cornea, when it must be returned by the silver end of the curette.

“ The introduction of a needle into the anterior chamber can always be effected without the slightest difficulty, and it can generally be retained there for a sufficient length of time to break up the texture of the lens without the escape of the aqueous humour, notwithstanding the repeated movements of it that are necessary for performing this operation. From reflecting on this circumstance, it occurred to me, that if a knife could be constructed that might be introduced into the eye with as little force as is necessary for the introduction of the needle, and could be formed of such a shape as would complete the section of the cornea without danger of wounding the iris, the difficulties and the danger attending the operation would be most materially lessened. Let it be remembered, that in the usual way of operating, the knife cuts its way *into* the cornea, which requires considerable force ; whereas, upon the plan I propose, it is introduced into the anterior chamber without any further division of the cornea than is necessary for the purpose of its introduction, the section of the membrane not being commenced until both sides of the cornea have been punctured ; and the knife is of such a shape and is then so situated that there is little danger of the iris falling forward before its edge.

“ Those who have ever performed the operation of lithotomy with the gorget, and afterwards with the small beaked knife first used by the late Mr. Blizard, and have contrasted the force necessary to make the section of the prostate gland from without inwards by means of the former instrument, with the facility with which, the latter being introduced into the bladder, the section can be made from within outwards, will readily understand the advantages that attend the mode of operating I now propose, as well as the reasoning that has led to its adoption.

“ The objects I propose to attain in the construction of the knife are—

“ 1st. That it shall be of sufficient length to traverse completely the anterior chamber, and divide the nasal margin of the cornea.

“ 2nd. That it shall increase in width and in thickness from point to heel enough only to prevent the escape of the aqueous humour in its transit across the anterior chamber, but that its width shall have no reference to the dimensions of the section that is to be made, as that circumstance, I conceive, has occasioned all the difficulty of its introduction, and the chief danger of the operation.

“ 3rd. That it shall be of such a shape and figure, that when introduced in the middle of the temporal margin of the cornea, and carried across the anterior chamber, it shall readily puncture the nasal side of that membrane, and when placed in this situation the cutting edge shall be so far beyond the pupillary margin of the iris, and opposed to so large a portion of its anterior surface, as will prevent its escape beneath the edge of the knife to endanger its division in making the section of the cornea.

“ 4th. That when the section of the cornea is thus about to be made, the edge of the knife shall be opposed only to the margin of the section on either side, and not to any extensive portion of its internal surface, whereby its division would be attended with difficulty, as is the case in using Beer's knife.

“ In order to attain these objects, the knife must describe a portion of a circle of larger diameter than that of the cornea; and after having tried a vast variety of shapes and sizes, the one I now propose seems to me to fulfil the foregoing indications the most effectually. At first I used a much narrower and finer knife, but I found that in introducing a cutting instrument of such a length, the aqueous humour was liable to escape unless it increased more rapidly both in width and in thickness. I have also tried one wider at the heel, but in that case greater force is required for its introduction, which is not counterbalanced by any commensurate advantage in completing the section, unless the cornea be of unusually large dimensions.

“ The back of the knife describes a sixth part of the circumference of a circle, the radius of which is ten lines. The chord of the arc formed by the back of the knife is, of course, also ten lines in length, being equal to the radius of that circle; it is therefore greater by four lines than the diameter of the cornea, and the blade is consequently quite long enough to complete the section of that membrane without difficulty. The knife is two lines in width at the heel, whence it gradually tapers to the point; it also increases uniformly in thickness, as well as in width, from point to heel, so as to occupy completely the aperture it makes in the cornea, for the purpose of preventing the escape of the aqueous humour.”

“ In making the upper section of the cornea with this knife, it is to be held in the usual manner, between the thumb and the two fore-fingers, the other two fingers resting on the patient's cheek, and the

handle of the knife slightly inclined towards the side of the face, while the point punctures the cornea on its temporal margin ; the handle of the knife is then to be brought upwards, with a sweep as the blade traverses the anterior chamber ; and when it has punctured the nasal side of the cornea, the handle will be nearly at right angles with the temple. The knife is then to be carried completely across the anterior chamber : in doing this great care must be taken to press firmly downwards with the back of the instrument, so that the wound may not be unnecessarily enlarged by its cutting edge. This being accomplished, the point of the knife will have reached the nasal canthus of the orbit, and its cutting edge will be so far beyond the pupillary margin of the iris that it cannot be readily divided in completing the section of the cornea. The point of the knife is then to be carried upwards, the handle being slightly inclined in the opposite direction. The section of the cornea on its nasal side will now be complete, a small portion at the upper and outer part only remaining to be divided ; and this is readily done in the withdrawing of the instrument.

“ In this way, the cornea being transfixed by an instrument of such a size only as will prevent the escape of the aqueous humour, no unnecessary force is employed, either in accomplishing this object or in preventing the eye from rolling inward. The section is completed, not by thrusting a wedge-shaped knife through the anterior chamber, the cutting edge of which divides the circumference of the cornea, only by the force with which its back is pressed against the opposite side of the section, but by an instrument that accomplishes the division of the membrane independently of any such pressure on its back. No unnecessary force is therefore had recourse to, and consequently spasm of the muscle of the globe is much less liable to occur ; the aqueous humour is much less liable to escape ; and if it should do so, the shape of the knife and its position in the anterior chamber are such, that the iris can scarcely fall forward before its edge ; and even if this should be the case, it will much more readily recede behind it, under the slightest pressure of the finger on the cornea.

“ In addition to these advantages it may be observed, that the danger of bruising the iris, by the forcible compression of it against the knife, when spasmodic action of the muscles of the globe occurs, is also avoided, and the consequent chronic inflammation of that structure that is so liable to be produced from this cause, is likewise obviated.

“ There is no difficulty in introducing the knife in the direction here pointed out ; on the contrary, its passage through the anterior chamber will be accomplished with greater ease than is the case with the ordinary straight knife, for in this stage of the operation the pressure will necessarily be made against the back of the knife, and thus the danger of dividing the cornea to too great an extent before it is punctured on the nasal side will be avoided. The pressure thus made with the back of the knife also tends to prevent the involuntary turning of the eye upwards and inwards, and the section is completed

without doing any violence to the iris, or to the internal tunics of the globe."

The author has likewise illustrated his description by four plates exhibiting the form and mode of operating with this sickle-shaped knife, which is not unlike (though much smaller) that recommended by Charles Bell ; but although we have not had any practical experience of its utility, we do not anticipate its ever superseding to any extent the instrument of Beer. The remainder of this tract is occupied with some very useful practical remarks on the operations for cataract, and the subsequent treatment, for which we must refer the reader to the work itself.

Removal of a Dropsical Ovarium entire by the large Abdominal Section. By D. HENRY WALNE, Surgeon. Two Pamphlets, 1834.

AUMONIER, near seventy years ago, extirpated the ovary successfully, and others have done so since in France, Germany, and America. In 1809 Mr. Macdowal of Kentucky, performed the operation of extraction of a diseased ovary, twice successfully, and once, where though from adhesion to the bladder the tumour could not be removed, after the incision had been made into the belly, yet the patient recovered. Instigated by these examples, Mr. Lizars of Edinburgh was induced to perform the operation, and did so in four cases, the details of which were laid before the public with the utmost candour in 1825 ; his first operation having been in 1823. But these, far from inducing others to imitate his example, had a precisely opposite effect. There is a daring coolness and hardihood (almost amounting to indifference) manifest in the manner in which Mr. Lizars performed the terrible feat of laying open the abdomen by an incision from the cruciform cartilage to the pubes, which is any thing but seductive. Besides, the cases were untoward. In the first, after having made the requisite incision, while his friend " Dr. Campbell in vain endeavoured to confine the intestines within the abdominal cavity," he " proceeded to examine the state of the tumour, *when to his astonishment he could find none.*" The wound was stitched up, and, after some very severe symptoms, the woman recovered from the results of this disastrous proceeding. In the second case one enormous tumour was removed ; but then, for the first time, it was discovered that the other ovary was also diseased, and very much enlarged, and *this was left behind.* In the third case the tumour was found

extensively adherent "to the parietes of the abdomen, the colon, and to the brim of the pelvis;" these were partly divided by the scalpel, and partly torn through with the finger; but death ensued. The fourth case differs from the rest. When the tumour was cut down upon, a number of large convoluted vessels appeared on the surface, and dipping into the subject of the tumour, these vessels, which were omental, were so numerous and of such magnitude, that its removal was out of the question, a trocar was pushed into the tumour, but no fluid came out, and a deep incision into its substance shewed it to be "solid and cartilaginous"—nothing therefore remained but to make the best of a bad business, and to sew up the enormous incision which had been so uselessly made. After many hair-breath "scapes," the wound was healing when the case was published.

These cases at the time created much excitement, but not in favour of the operation; and Mr. Walne, who otherwise speaks in a laudatory manner of Mr. Lizar's operations, says:

"Still, however, an extraordinary apathy on the subject continued to affect the whole profession in Great Britain, and I am not aware that this operation has ever, till within these few months, been repeated by a British surgeon; and I believe that it never had been performed at all in England, before Dr. Charles Clay, of Manchester, on the 12th of September last, operated in his first case; nor in London, until, on November 6th, I operated in the case I am about to record. The minor operation had, indeed, been performed in different parts of the country by several gentlemen, with various success, but it is clearly shewn to be inapplicable to a large proportion of the examples of the disease which come under treatment.

"Between four and five months ago, a case of ovarian disease presented itself, which I thought might be treated by operation, with a reasonable prospect of success, as it held out the probability of freedom from adhesion, and did not appear to be of a very solid character. An accidental disturbance of the health of my patient, and the period required for her comfortable restoration by a visit to the country, had served to postpone my purpose, so that by the time at which I had proposed to operate, Dr. C. Clay's first case was published; and this served to decide my choice of operation. I determined to extirpate the diseased ovarium by the large abdominal section, and found a ready approval of my purpose on the part of Dr. Blundell, whose careful investigation of the case had already confirmed my own opinion of its nature.

"Accordingly I arranged for the performance of the operation on the 6th of November, but had the still further satisfaction of seeing Dr. Clay's second successful case in print on the 5th, and of receiving the same day an obliging answer to two or three inquiries as to minor

details of the operation, which, though a stranger to him, I had not hesitated to make.

“ My reasons for preferring to operate by the larger section were these: that it does not appear that a less extent of wound diminishes the danger of the operation in any material degree, if at all; and that the complications which occasionally present without being foreseen, and which, indeed, do not admit of being foreseen in every instance, can be better appreciated, and more suitably dealt with by the surgeon, through a free opening than through a small one.

“ For example, the effusion of blood, or the escape of fluid from the cyst into the peritoneum, either of which is a most dangerous complication of the difficulties inseparable from any method of operating, can with no certainty be avoided in the minor, but may assuredly be remedied if they should occur in the major operation. Adhesions, too, can be divided, the parts can be cleansed and arteries tied with facility, if necessary, and the operator's mind freed from doubt as to the state of the internal parts, before he carefully closes the wound. These are circumstances which the experienced operator can appreciate, and if he should not be blinded by an undue apprehension of peritoneal inflammation, he will be sure to estimate highly such palpable advantages.

“ To proceed with the case:—

“ Mrs. F——, of —— Street, Marylebone, æt. 58, applied to me some time in the month of July, with great abdominal enlargement, equalling indeed that of pregnancy at the full period. The catamenia had ceased four years. She used to be subject to floodings. Had given birth to five living children, and miscarried several times. A rounded prominence of the abdomen, of a circumscribed character, with fluctuation, and moveable as a whole, was found on examination; whilst the health was good, and there was no sign of general dropsy present. She had observed her gradual increase of size for more than two years, and, as she could not account for it, had lately felt uneasy on the subject, though it caused her no pain, and was, indeed, only an incumbrance and made her unpleasantly remarkable. From scrob. cordis to pubes was $17\frac{1}{2}$ inches; her circumference was $37\frac{1}{2}$ inches. I pronounced her case, on investigation, one of ovarian disease, and after a few interviews, referred her for confirmation of my opinion to Dr. Blundell. Having obtained this, I began to hint at the means of cure, and having gradually gained her confidence more and more, and as gradually intimated my purpose; not concealing from her or her family the risk attending the measure; after the cause of postponement above alluded to had been removed, fixed the day of operation, with her ready and full concurrence, and enlisted my friendly coadjutors for the occasion. A few hours before the time appointed, I went over the steps of the operation with a part of these friends; to one of whom was assigned the charge of the tumour, exclusive of all other engagements; to another, that of covering the exposed interior parts by the divided skin, the moment opportunity should offer. The temperature of the room was to be raised rather above 70° Fah.;

and means were adopted to secure it from change in this respect as much as possible. A mild dose of aperient medicine, given over night, not having acted, an enema, administered half an hour before the time named, gave the required relief.

“ Dr. Blundell, Mr. Vincent, Mr. L. Beale, Mr. Law, and Dr. Freund, of Vienna, were punctual, and between three and four o'clock, P. M., the patient was placed on a couch, with her feet upon the ground at its end, and her back supported by pillows. Some little preliminary examination having been made, and myself and more fixed assistants having taken our posts, myself seated on her right, for the satisfaction of all parties I commenced with an exploratory incision of the integuments and tendinous expansion, and then of the peritoneum, to the extent of an inch and a half. A finger was passed on each side into the peritoneal cavity, and the fluctuating cyst distinguished quite clearly. No fluid escaped. I now proceeded with the scalpel to enlarge the incision from above downwards, including that already made, to the length of thirteen inches, or a little more, first in the integuments, avoiding the umbilicus, and afterwards in the peritoneum, from the small opening, with a probe-pointed bistoury, guided by two fingers of my left hand, upwards and then downwards to the same extent, being from about three inches below the scrobiculus cordis to within one and a half of the pubes. This accomplished, the wound began to expand on each side, and the tumour to advance gently, but more briskly when its greatest bulge had passed through the wound, demonstrating the propriety of some one being appointed for its management, and giving the most satisfactory evidence of its being mainly free from unnatural attachment. It had not been ascertained with certainty which ovary was affected, but the right was suspected to be the one, and so it proved. I now passed two fingers behind the broad ligament, and Mr. Law sustained the tumour, which might otherwise have fallen forwards. With a needle, having its eye near the point, and fixed in a handle, guided by the two fingers, I passed a double ligature behind the pedicle, and thrusting the needle through the middle of that part, brought its point forward. The ligature was divided, and disentangled from the needle, which was then withdrawn. The tails of the ligature being adjusted for tying the two halves of the pedicle separately, I now tied one of them, but in doing so the silk broke. The remaining one was used for introducing a second double ligature, with which the former had to be replaced. After tying the pedicle, I divided it between the tumour and the part tied, and having done so, had the satisfaction to see the huge mass of more than 16lbs. weight lifted from its place, and carried away by Mr. Law, no adhesions whatever interfering. I now examined the cut end of the pedicle, and tied a considerable artery. At this period the patient became very sick, and made repeated efforts to vomit, but nothing was brought up. Dr. Freund had been in charge of the divided integuments, and closed them over the abdominal viscera, securing the in-

testines from exposure to air as much as possible. Whilst the retching efforts continued I aided him in this work, and my other friends were taking every care of the patient in other respects. When these had ceased I again looked for bleeding vessels; but as there was a general oozing, rather than any other form of bleeding, it was agreed to tie the pedicle in its entire circumference, some notion prevailing that the needle might have severed a vessel at a distance from the cut surface. I accordingly did this with double stay silk. Bleeding ceased, the wound was cleansed, the other ovary examined by Dr. Blundell, and nothing remained to be done but to close and stitch the wound. About a dozen of interrupted sutures through the integuments, which had been marked before the operation for our guidance at this moment, served to bring the parts together. Long pads of lint were laid down each side of the abdomen a little away from the wound, and strips of a mild adhesive plaister carried over them from one side of the body to the other. A broad bandage, entire at the middle, but slit up into eight roller-heads, and previously laid ready beneath her back, was made comfortably tight, and the ends, after once encircling her, tied on alternate sides of the patient's abdomen. This seemed to give her a satisfactory feeling of security, and drew from her a remark of approval.

"At the conclusion of the operation, her pulse was 76, counted by Dr. Blundell: it had been exactly that number when reckoned by myself the evening before: she was, however, pale and cold, and when laid in bed requested to have something given to quiet her nerves: a bottle of hot water was put to her feet, she was well covered up, and an anodyne administered, with directions to repeat it in an hour: it was composed of $\frac{1}{4}$ gr. Morph. Acetat. and $\frac{3}{4}$ iss. Camph.; and was so repeated. At five o'clock her pulse was 82. When I visited her at eight, it was 96. She had become warm after the anodyne, and having slept two hours, was now perspiring freely. From this time she was neither cold nor had chilly sensation: on waking from her sound sleep, she was at first a little confused, but this soon ceased, and she was generally quite clear and calm in mind. When the pedicle was tied the first time, she had complained of some pain in the loins, and still more at the second tying of that part; a general smarting of the wound was also, of course, felt. These continued between two and three hours, but had now subsided almost entirely. A sensation of throbbing succeeded, which also ceased in the course of the night. At twelve o'clock, I paid her my final visit, and drew off five ounces of urine. She had slept three hours since eight o'clock; pulse 94 before, 89 after the use of the catheter. No unfavourable symptoms.

With the exception of some vomiting, nothing particular occurred till the sixth day after the operation, when the report is

"11th. She had not had so good a night; vomiting had twice occurred, with strong retching, and she had brought up a good deal of

bile: there was constant nausea, and occasional eructation; \bar{z} vj. of urine; no motion; occasional griping; pulse 80. I dressed the wound, removing all the stitches below the umbilicus, but leaving those above that part. I directed that some beef-tea should be given with salt in it.

“At mid-day the symptoms were not amended. Pulse 83; tongue dark brown, and much coated, her manner drowsy, and her mind at times confused; constant nausea, occasional vomiting, and frequent hiccup, with pain at the navel. These symptoms made me anxious for her safety. They were those of intestinal distress, and reminded me of such as occur in strangulated hernia, and at the ushering in of intestinal fever of a bad form. I speculated on the circumstance of the disappearance of the ligatures, and how they might contribute to the production of the symptoms. I deemed it useless to search for them, as their attachment to the pedicle would render their removal, if found, impracticable; and after conferring with my friends Dr. Blundell and Mr. Vincent, determined to make no attempt of that kind, but give the anodyne, then an enema in two hours, and repeat the anodyne if necessary. All this was done. The first anodyne relieved the sickness, procured her some better sleep, and revived her very much. The enema produced a discharge of flatus, and some little feculent matter. She had a tranquil night after the second anodyne, and on the morning of the 12th felt better, having passed \bar{z} xi. of urine in the night, and having been scarcely at all sick. Pulse 79, soft and full; skin warm, and freely perspiring; occasional hiccup, which still causes pain at the navel. Wished for tea and toast, and took some beef-tea with toast in it.

“Throughout the day she continued to improve. She passed \bar{z} ix. more urine. At night the enema, and then the anodyne, were repeated: the former produced a motion, which in part consisted of a large hard lump of fæces; her night was good, and on the

13th. She had neither pain nor sickness. \bar{z} xvj. of urine passed in as many hours; her tongue was moist, and rapidly cleaning, yet the singultus occasionally returned: this she said she was very apt to experience when well, and was partially relieved by sipping water. I dressed the wound, removing the remaining stitches; adhesive matter was covering those parts of it which were not closed, and which, at three points together, amounted to less than three inches. She was cheerful and comfortable at noon, when the wound was dressed, but within a very little time she had again some nausea, and other symptoms resembling those of incarcerated hernia. She thought the dressings too tight, and, on raising one of the strips of plaister, it was found that one of them in particular had been so; it lay over a part of the wound not yet quite closed, where intestine, slightly protected by adhesive matter, was liable to pressure. On my removing this piece of plaister she felt sickish and faint, but immediately after much relieved: it had evidently contributed to the renewal of unpleasant symptoms, and the circumstance is, I think, one of great practical interest, for it confirms the observation which the whole

circumstances of the case, after the completion of the operation, are calculated to draw forth, viz., that it is not so much peritoneal inflammation as suffering in the viscera of the abdomen, more particularly the intestines, which is to be apprehended as a consequence of free incision for the removal of diseased ovarium.

“ Having obtained great relief from the loosening and more lightly adjusting the dressings of the wound, one other cause of uneasiness and anxiety remained. Several hours had elapsed without her having passed her urine, and she felt doubtful of her power to do so; the catheter was accordingly used for the last time. The enema and the anodyne were also repeated.

“ On the 25th the ligatures appeared at the pubic end of the wound, and on the 27th I removed that which had secured the artery of the pedicle. On the 29th she felt quite well; the wound was healed, except a seton-like opening at the lower end of it, where the ligatures were lying, and one point by the umbilicus of redundant granulation of the size of half a pea. It was found requisite to give her a mild rhubarb draught occasionally, or sometimes a little magnesia, as the bowels did not act with quite their accustomed freedom, but in all other respects she was now well, and fast regaining her strength.

“ I have not interrupted my narrative of the practical details of the case by any description of the diseased part removed by the operation; and the difficulty I might have had in conveying to my readers a correct idea of its character is fortunately rendered trifling by the spirited wood-engraving executed by Mr. Lee, from his own accurate sketch, which he made before any material change in its appearance had occurred.

“ The greater portion of the mass was fluid, contained in one or more cysts. A substance of about the size of two fists, having at some points a scirrhus hardness and abruptness of form, occupied that part of the tumour where the remains of the fallopian tube, meandering towards its fimbriated extremity, sufficiently declared it to be the ovarium of the right side, much enlarged and changed in structure. The fluid is of the ordinary character of ovarian dropsical fluid, and the solid portion is probably of a scirrhus character; but as I have thought that the disease as nearly in its actual form and size at the period of its removal, as it could be preserved, is more valuable for the surgical illustration of the subject than when cut into slices for pathological ends, as has been done by hundreds such, to which no other history than that of their fatal influence on the frame that bore them attaches, I have not yet pursued the ordinary course of destructive investigation with this one, convinced that in its present state it suggests useful reflections to those practitioners within its reach, whom apathy or prejudice may not prevent from thinking on the important question of the curability of certain diseases of the human ovarium by operation; since their cure by other means is, by general admission, deemed hopeless.

“ But let me not be misunderstood. Let me not be supposed

for a moment to recommend this operation as one to be undertaken in any but well-selected cases, to which it is adapted; still less let me be supposed to advise that any surgeon should engage in its performance who has not, by habits of operating, yet more by long habits of careful observation and treatment of disease generally, and by very considerate and studious examination of the nature and connexions of this particular disease, and the tendencies of the viscera, which may be involved in mischief by an ill-judged operation, or ill-conducted after-treatment; qualified himself to cope with difficulties, from which it is unreasonable to expect an exemption.

"The ligatures of the pedicle, which had not come away when the paper went to press, remaining with very little change of position, and being in vain pulled at every other day, on the 6th of January were twisted gently into the form of a cord till resistance was felt, and slight pain excited. They were then fixed in their twisted state by plaster. This proceeding was renewed on the 8th; and on the 10th of January, about ten weeks after the operation, they were drawn out without pain or resistance. In a few days the canal they had occupied closed, and the patient's cure was perfected.

"I was not aware at the time of drawing up the particulars of my own case, that the operation had been performed by Dr. Granville. It appears, however, that that gentleman operated unsuccessfully in 1827, and that he had attempted a similar operation in the previous year, but, on finding extensive adhesions, desisted by the advice of those about him. No professional account of the completed operation was ever published. Of the other I find a brief notice in a medical journal of the period."

Mr. Walne performed the operation a second time. The patient was a lady 57 years old, who dated the origin of the disease sixteen years before. Previous to the operation he secured the right adjustment of the wound, by marking the skin of the abdomen with solution of nitrate of silver in lines across the *linea alba*. He also supported her well with "nutriment that would leave little residue to load the intestines afresh, and yet should well sustain her through the operation, and its immediate consequences." Remembering the cold extremities and low condition of his former patient just after the operation, he gave a pint and a half of good beef-tea to this one, about two hours beforehand.

The operation resembled the other; the incision was twelve inches long, and the tumour about the same size, "rather less solid than that he removed in November last. It weighed 16 pounds and three quarters imperial weight, and when laid in a dish measured in horizontal circumference 2 feet 11½ inches; in vertical circumference 2 feet 6 inches." The most remarkable circumstance in the operation was, that "after the division of the

pedicle, and the removal of the tumour, there was hæmorrhage, on the suppression of which the shortness of that part (i. e. the pedicle) occasioned some difficulty; but on drawing it up by the ligatures I could command the vessels by holding the bleeding part within the finger and thumb of my left hand, and they were, after a little delay, secured by another ligature which included the pedicle again entirely. The advantage of a free incision was particularly felt at this period."

The lady recovered very well of the operation, but was at one time threatened with fatal consequences from inflammation of some varicose veins of the thigh and groin.

These cases were well chosen, the arrangements admirably made, the operation was well performed, and the after-treatment most judicious: we have therefore (though the merit of originality belongs to others) to praise the judgment, boldness, dexterity, and professional skill of Mr. Walne.

Dr. Frederick Bird, last June, also performed the operation of extracting the ovarian cyst. His mode of operation differed from those of Lizar, Clay, and Walne, as, instead of making a large incision of twelve or thirteen inches, he only made one from three and a half to four inches, the blue cyst of the dropsical ovary then pushed through the opening, and was punctured with a trocar, and all the watery contents were drawn off; a few slight adhesions having been separated, the collapsed cyst, which had previously been secured by a pronged forceps, was drawn out, and a ligature having been passed round the narrow neck, it was cut away. After some ugly symptoms, one being the escape of a large fold of the intestine through an opening in the wound between the ligatures, and some little trouble in reducing it, she recovered. A small portion only of the tumour presented a solid structure, in size not exceeding that of an orange, and appearing to consist of the remaining portion of the ovary not involved in the formation of the cyst. The fluid contents amounted to about two gallons; and the total weight of the tumour was 20 pounds." Mr. Bird's reasons for adopting the small incision will best be given in his own words:—

"Hitherto I have but described the steps of the operation, and I would now venture to make a single remark on the cause which induced me apparently to profit so little by the recorded cases of Dr. Clay and Mr. Walne.* It was, however, from their careful perusal, that I was led to arrive at a somewhat different conclusion from that expressed by those gentlemen. The cases of Dr. Clay,

* Vide MEDICAL GAZETTE: the cases of Dr. Clay are contained in another Journal.

and still more his useful practical observations, have sufficiently demonstrated the amount of danger which attends the attempt to perform extraction through a very small opening: the truth of which I saw exemplified in a case that occurred some years ago, in which the failure of the operation and the death of the patient (for failure in these cases seems to amount to death,) were undoubtedly to be attributed to the smallness of the abdominal incision; a secondary cyst of inconsiderable size having formed the obstacle, and which could readily have been removed by a somewhat more capacious opening.

Whilst thus according in the disadvantages said to attach to the small abdominal incision, I cannot but believe that important objections apply with equal justice to the very large section, the chief of which undoubtedly is the question of necessity. Is an incision from pubes to ensiform cartilage, in cases in which the ovarian tumour is wholly or in part fluid, really required? There can, I conceive, be no valid objection to evacuating the liquid contents partially or entirely, and thus causing so great a reduction of bulk as to allow of the removal of the ovarium through an opening of less size than that constituting the *major* operation; for if an incision be made sufficiently large to admit of the cyst arising from out of the abdominal cavity without any forcible traction—if it also be sufficiently large to allow of the introduction of the hand of the operator into the abdomen, and thus enable him to apply with facility the necessary ligatures, or remove any abnormal attachments to the pelvic viscera—every end is answered, every indication fulfilled, and the making a large peritoneal section can confer no further benefit to the patient, unless the removal of an unpunctured cyst can be deemed such. It may be urged that a large incision into the peritoneum is less likely to be followed by inflammation than a smaller one, and this I am by no means disposed to deny; but were it proved, it would still be very questionable whether an operator would be justified in making an unnecessarily large incision solely with a view of enhancing the probabilities of ultimate success. I would not, however, dissent from the employment of a larger incision in cases in which the partially solid state of the tumour might prevent its sufficient reduction by puncture, but from the cases I have seen I am inclined to believe that it rarely happens that an ovarian tumour will not be found to be in part fluid, and therefore capable of being lessened in size by the introduction of the trochar. Many important points remain to be determined with regard to the relative value of the operation, and the number of cases yet recorded have not been sufficient to decide whether the chances of success exceed the chances of the occurrence of disease in the remaining organ. The observations of Mr. B. Phillips,* tend to turn the scale of probabilities against the ultimate safety of the patient, and to show that disease in a less developed form commonly exists in the opposite ovary. This, together with some other points in the pathology of ovarian

* Vide MEDICAL GAZETTE.

disease, I purpose, when my inquiries shall have been completed, making the subject of a future communication."

The reader has now sufficient means of forming his own judgment as to the eligibility of the large or small incision: in such cases as Dr. Bird's, or those of Mr. Walne's, where the solid part of the tumour is small, a moderate sized incision would seem preferable, but with the proviso that in case of any doubt, difficulty, or emergency, such as the hæmorrhage in Mr. Walne's second case, the incision should be increased to the full size of the necessity. A question has been often mooted, is the performance of the operation justifiable at all? Considering that hitherto in this country, abounding as it does in bold operations, it has never been performed, the general impression would seem to be in the negative. After the above cases, however, this opinion requires consideration. In our own minds, considering the absence of all other means of cure, there appear to be cases where the extreme anxiety of the patient for relief by operation, after the great risks have been fully explained to her, would justify the surgeon in performing it; but not unless the case is every way favourable, and the existence of the disease undoubted.

Since the above two cases, Mr. Walne has operated on another; a correspondent of the Medical Gazette says, "We understand that Mr. Walne operated successfully by the large abdominal section in a third case of dropsical ovary, on the 12th inst. The tumour, weighing twenty-eight pounds, was removed entire, and the patient, a lady under 30 years of age, is recovering rapidly and satisfactorily."

There has been some correspondence not of a very wise character, between some of the extractors of diseased ovaries, and their friends, as to whom the merit of suggesting the operation belongs. The merit of *reviving* the operation by the large section undoubtedly belongs to Mr. Lizars; and Mr. Bird, if he consults Dr. Churchill's learned work on the Principal Diseases of Females, will find, that not many years ago, Mr. Jeafferson, of Framlingham, operated successfully by making a small abdominal section, through which he punctured the sac, let out twelve pints of clear fluid, drew out the cyst, cut it off, and applied ligatures on the remaining pedicle.

Some Account of the Epidemic of Scarlatina which prevailed in Dublin from 1834 to 1842, inclusive, with Observations.
By HENRY KENNEDY, Esq., M. B., &c.

IN this work, Dr. Henry Kennedy has simply offered his *quota* of experience to the profession, without entering upon the gene-

ral history of scarlatina; and by so doing has, in our opinion, rendered better service to science than by any other plan he could have adopted. What we most want are carefully collected facts, and accurately observed histories of disease, and especially of epidemics.

As to the Author's opportunities of observing the epidemic disease, of which he treats, he states in the Preface that they "have been very extensive:"

"Besides hospital attendance, for which I was much indebted to the late lamented Dr. John Crampton, I have been connected with a Dispensary; and at a time when an epidemic is raging far and wide in a populous city, there is no field for observation which to my mind can be compared with the latter. Hence (with a few exceptions which are specially mentioned), there is not a form of scarlatina, or any of its sequelæ described in the following pages, which has not come under my own personal observation."

Dr. Kennedy commences his work by describing the pathological appearances in the two forms of the disease, which he has noticed: "1. The simply malignant; and 2ndly, the complicated malignant."

"In the first of these, the appearances on the surface of the body varied a good deal; as a general rule, there was much less of eruption found after than before death; to this however I saw many exceptions, for there was a certain run of cases, where it was only during the last day or two of life that the eruption, at least of an extensive kind, began to develope itself fully. In such, up to the moment of death, it rapidly increased, and continued to do so for a considerable time after, till at last the body in many parts became black, and, taken as a whole, was of a very dark colour. In these cases great swelling took place after death, and the signs of decomposition set in very early. In the greater number of cases however, the eruption showed itself under the form of large dark petechiæ, or, more correctly, vibices, existing usually in greatest number about the clavicles and inguinal regions, sometimes indeed confined entirely to these parts. It was very common also, to find them running down the inner side of the lower limbs. In three or four cases, where no eruption appeared during life, these dark petechiæ were observed about the clavicles after death. In other instances again, no distinct spots were observable; nothing in fact but intense congestion of the most depending portions of the body; it was not uncommon to find the hands and feet perfectly livid, having precisely a similar appearance to what has been observed in cholera. When any thing of a bright eruption had existed near the end of life, it almost invariably receded much afterwards. In a few instances, patches some two or three inches square, and of an unusually red colour, remained after death. With the exception of the particular sort of cases already alluded to, the

body commonly gave the impression of being very much shrunk, the skin often being in that state which has been termed "*cutis anserina*." I cut into some of the petechiæ which were the best defined, but found little if any thing to account for the mark so apparent on the surface; no extravasation was detected in any instance. Another common appearance on the skin was what was produced by pressure; the sloughing very seldom became extensive in any one point, for the patient did not live long enough for this, but the number of parts affected was in some cases very remarkable. Besides all the more usual parts, I saw sloughs on the inner ankle and inside of the knees, on the elbows, back of the head and ears. In the dead body they presented very much the appearance of a part which had been slightly burnt. Cases also were met with, where there was extensive excoriation of the skin in the inguinal region, and about the scrotum and nates.

"In the head, chest, and abdomen, it may be stated generally that nothing but congestion, varying in degree in different cases, was found. The substance of the brain was commonly injected, and there was also effusion both into and on the brain, which, however, varied so much in quantity, that nothing could be inferred from it. In some of the cases there was the appearance as if blood had been extravasated under the arachnoid, precisely similar to what every one may have seen in cases of typhus fever. In all such there had been violent delirium, and I believe that as a general rule it may be stated, that the more violent the symptoms had been during life, the more mischief was found in the brain after death; on this point however I would be understood as wishing to speak with great caution; at present I am quite at a loss to determine whether the poison of scarlet fever *per se* will cause the violent head symptoms, or whether the changes in the membranes and substance of the brain just alluded to are the cause, or possibly both conjoined.

"The lungs were found in every stage of congestion; they were sometimes so friable as to break down under the slightest pressure; it may be stated that Andral does not now consider this as any evidence of inflammation when existing alone. At other times, I found them so engorged at the posterior part, as to be more like a clot of dark blood than a portion of lung. The mucous membrane was very constantly much congested, and the tubes filled more or less with frothy serum. The heart also partook of the general congestion, and was often loaded with black blood; its texture sometimes appeared to me to be softened, and petechiæ could be seen under its serous membrane. The blood itself, as a general rule, was in all those cases of a thin and watery consistence; this was very observable when any opportunity offered of seeing it flowing during life, as there will be occasion to speak of again.

"The symptoms referrible to the abdomen were so frequently prominent during life, that my particular attention was drawn to any pathological changes which might be found here, and yet nothing was met with which would at all satisfactorily account for the symp-

toms ; there was sometimes very extensive congestion, as seen through the serous, and also on the mucous surface ; at other times it existed more in patches ; while again I could detect nothing whatever which could be set down as abnormal, and this too in cases where there had been violent diarrhoea before death. Tympanitis, though not to any marked degree, was often present.

“ In the form of the disease of which I have been speaking, the state of the throat was quite of secondary importance ; during life it was often not complained of at all, and after death the appearances corresponded ; some ulceration was always found in the tonsils, varying both in extent and depth, and it was remarkable how often it existed in the upper parts of these glands ; there was no swelling in these cases.

“ Such is a general view of the appearances which were found after death in the simply malignant form of the disease ; they certainly give rise to some important considerations, more particularly what has been stated about the organs of the abdomen, but these must be reserved for another place.

“ The second form of the disease, which I have ventured to call the complicated malignant, owed its severity, in part, to the upper portion of the throat and its neighbourhood becoming engaged. This form has been specially alluded to by Dr. Graves, also by Dr. Osbrey, in his very able account of the epidemic, as met with at Mary’s Dispensary. It shall be my endeavour to enter still more fully into the subject, particularly as some varieties in the morbid changes were observed, which modified the course of the disease during life, and which is therefore of importance to distinguish.

“ In many cases, the neck was attacked while the scarlatina was still at its height ; in others again, the constitutional symptoms had in great part subsided, the patient being on the road to convalescence, before any swelling showed itself. In the great majority, once it had commenced, it spread with amazing rapidity ; sometimes both sides were attacked at once, at other times it would commence at one side and spread round to the other. It was the exception to the general rule when the swelling only occupied one side. When one came to look closely at it, it appeared to be truly immense, for it not only encircled the neck like a cravat, causing the face to be swollen above, but in many instances it spread down to the very clavicles ; and in one remarkable case, which was also seen by my friend Dr. King, the swelling engaged the pectoral muscles, rendering them as hard as a board. In this instance, the neck was attacked while the eruption was still fully out, and to all appearance favourable. When pressure was made on parts in this state, the idea conveyed was that of extreme hardness, and this was found to extend much farther than the eye would lead one to suppose.

“ The skin sometimes preserved its natural appearance ; at other times it was glazed, shewing the extreme state of tension in which it was ; while again redness was visible, quite distinct from the colour of the skin over a common abscess, being more mottled, and of a rose-pink hue. The cases in which pressure caused pitting, were, as far

as my experience went, the exception to the general rule; even when it did occur, it was very slight. It was remarkable how much the swelling subsided after death; on cutting into it, great differences were found in the state of the parts, apparently bearing a relation to the duration of the complaint. Thus when the child died within twenty-four or thirty-six hours from the time the swelling first showed itself (and this frequently occurred), effusion of serum into the textures was all that was found, together with a turgid and highly vascular state of the lymphatic glands, which in some cases attained an unusual size. When a little farther advanced, pus of an unhealthy character was found, either infiltrated through the swelled parts, or else collected in small but perfectly distinct abscesses about the size of a pea. In other cases again, it formed itself into one large abscess. The pus sometimes appeared to take the place of the serum, while again it was formed after it; in these latter, it most commonly occupied the central portions of the swelling. It is scarcely necessary to remark that the more closely this form of inflammation pursued the course of common abscess, the more favourable the case turned out. In but too many instances, however, the contrary took place, and then a process of sloughing set in, which those who witnessed it will not readily forget. It was remarkable, in almost every case I saw, for the amazing rapidity of its progress; some cases of a more prolonged duration occurred, but they were the exception to the general rule. In a period of forty-eight hours, and seldom exceeding four days, I had repeated opportunities of seeing the most fearful mischief done. Sometimes the cellular membrane alone seemed to suffer, and then after it came away, the parts were left cleanly dissected; at other times the lymphatic glands were affected with it; in one instance, which was also seen by my friend Surgeon Barrett, the sloughing went on to such an extent and with such rapidity, as to expose two of the glands much enlarged, and cause them to be disgorged, as it were, from the diseased part within two days.

“In two or three instances, where the cellular membrane passed into a state of most unhealthy sloughing, I found the lymphatic glands had formed themselves into little bags containing laudable pus. In several cases the muscular structure, which is known to resist this process so long, appeared unable to do so, and in such, the upper portion of the sterno-mastoid was completely disorganized, so much so as to break down from the slightest pressure into a bloody, purulent matter. When these cases had been left to themselves, the matter made its way outwards by a distinct slough of the skin, often as large as a shilling. No less than three cases came under my notice, where the patients bled to death from the vessels giving way. A very brief detail of each of these may not be out of place. In the first, a child about seven years old had passed through scarlatina: an abscess of a large size formed on one side of the neck, which went on to burst; while in this state, the parents observed one evening that it suddenly became enlarged, and that this was immediately followed by bleeding from the opening in the skin: it was then thought high time to send for assistance, for no one had seen the case pre-

viously, and Mr. M'Carthy, of Capel-street, was sent for ; he arrived in time to see the child die : I did not see it myself till after death : there was no examination in this instance. The second case was similar to the last, except that here the matter was given exit to by incision ; several days after this, and when there were some hopes of the child recovering, hæmorrhage took place : I happened to be on the spot, and had no difficulty in controlling it for the time, but it recurred again, and the child sunk. On making an examination, it was found that the internal jugular vein had given way by sloughing, close to where the common carotid divides : the opening in the vein was surrounded by a distinct rim of lymph. The third case was a still more fearful one to have seen than either of the preceding ; for an opportunity of doing so, I am indebted to the kindness of my friend Dr. Strong. This child, æt. 9, had been convalescent before any swelling shewed itself : both sides of the neck were attacked with sloughing, the right, however, more extensively than the left. The cavity here formed literally extended from the jaw to the clavicle, and was proportionally broad : there was no difficulty whatever in distinguishing nearly the entire course of the digastric and sternomastoid muscles, with a portion of the omo-hyoid, the submaxillary gland, and the great blood-vessels. This child also bled to death, a slough having formed in the internal jugular vein, exactly where it joins the subclavian. There had been repeated hæmorrhages from the same point for two days previous to the final one.

“ It sometimes happened that the inflammation, after it had spread down the neck, engaged the sterno-clavicular articulation, causing pus to be formed in this joint, and at times destruction of the cartilage. I have not met with any case of scarlatina, where the disease in this way reached the mediastinum, though this has come under my notice in other forms of diffuse inflammation. In one instance, where I opened a very large abscess below and behind the ear, it happened its entire contents were discharged at once ; and it appeared to Surgeon Barrett and myself, that the skin then literally came in contact with the transverse process of one of the cervical vertebræ denuded of every covering but this. This case did well.

“ Of all the parts of the neck none appeared to me to resist the sloughing process so well as the arteries and salivary glands. It was not at all uncommon to see the submaxillary gland helping to fill up the opening of the skin caused by sloughing ; and even in cases where pus was infiltrated through their substance, the structure of the glands themselves remained unaltered. The edges of the sores, while sloughing, were either of a dark red or livid hue, and in two or three instances quite black. Dr. Osbrey has alluded to three cases where sores on other parts of the body closely resembled hospital gangrene ; nothing of this sort came under my notice : in every instance I saw the edges were deeply undermined, so much so as always to fall inwards, and in this respect to make a marked distinction between the two diseases. Were I to compare this process of sloughing with any other I have seen, I should say it bore a very close resemblance to the usual progress of cancrum oris.

“ For so far attention has been directed to a form of swelling of the neck, which, as it progressed, either went on to form abscess, or else spread itself by a sort of diffuse inflammation. I would now speak of a distinct variety of swelling which repeatedly came under my notice, and which, for several reasons to be stated farther on, appears to me to require special notice ; neither am I aware that it has been noticed by any author. I mean cases where the swelling was caused by the effusion of nothing but lymph ; the progress of this form of disease was if any thing more rapid than the other, at least to a certain point, but after this all resemblance ceased. Thus two days were here often sufficient time to allow the whole anterior and lateral parts of the neck to be engaged in one uniform swelling, at other times the period was longer, but the characteristic point about the disease was this, that when the swelling had reached its height it seemed at once to become stationary, in fact it rarely went on to form abscess ; nor did a single instance come under my notice of this kind of swelling where sloughing took place. If in the other form of disease the hardness was remarkable, it was still more so in this ; it was literally like a board. The skin too scarcely showed a trace of redness, and in many cases was of the natural colour. When abscess did form, although several square inches were engaged in the disease, the quantity of matter discharged did not exceed two or three drachms, and in some instances, after weeks of poulticing no change whatever took place. I have of course been supposing that in such cases the patient’s life was prolonged, for it too often happened that they were cut off very suddenly ; of which more again. It was this form of the disease which was spoken of before, when mentioning a remarkable case in which the swelling, besides including the entire neck, also spread to the pectoral muscles. Sometimes, however, the affection was much more localised ; thus, it was confined strictly to the submaxillary regions ; or again, it only involved one side of the neck. I have had occasion to make incisions into these swellings, both before and after death, and as has been already stated, found nothing but lymph effused. It is not to be supposed from this, that in the other forms no lymph was found, but merely that it was not in such quantity as to modify the course of the disease. This subject will be brought under notice again.

“ The pathological changes which have been hitherto spoken of, were severe enough to have to contend with ; and yet, in many cases, they were not the more immediate cause of death, which was clearly to be traced to the state of the internal fauces. Before going farther, I may state that I did not meet a single instance where sloughing of the mucous membrane appeared to be the cause of death : there is nothing more common, however, than to read of sloughing sore throats, and expressions to that effect, and to attribute death to this cause. I think it may be safely asserted, that sloughing of the mucous membrane rarely indeed produced death in the last epidemic, and that when it did occur from disease here, it was owing to other and very different lesions. There were two which more particularly came under my notice, the one was diphtherite, and the other

œdema of the glottis. The former of these (which during one part of the epidemic of scarlatina prevailed much as an uncomplicated disease) usually occupied the entire surface of the internal fauces; the exudation of lymph was frequently traced in every direction, sometimes into the posterior nares, and again into the eustachian tubes: it also passed for some distance down the œsophagus; its more serious course, however, being into the larynx, forming croup, and in this way causing death; in this latter case, the exudation was found to stop about one inch below the rima of the glottis. Its thickness varied a good deal; thus, as might indeed be expected, it was thicker and of a more dense consistence on the tonsil than elsewhere; it also adhered more firmly here. The mucous membrane under it was redder than natural, and had the appearance of being abraded. The lymph sometimes existed in patches, though it struck me, from the look of the parts, that the whole surface had been previously covered with it.

“œdema of the glottis was a somewhat rarer complication to meet with than the last: as it commonly does, it engaged the chordæ vocales and epiglottis the most,—at times, nothing but serum was found to cause the swelling, while again lymph seemed to be poured out under the mucous membrane, which, however, on more close examination, it was difficult to make out. The uvula formed itself in these cases into a bag very much like a hydatid.

“Both these forms of disease were found accompanied by ulcerations varying in extent and number,—thus there was very constantly one in the upper part of either tonsil; its edges were irregular, and its depth usually very considerable. I also found ulcers in a very distinct form about the chordæ vocales; here also they were deep, but of a more circular form, and about the size of a grain of large shot; in one instance, the alæ of the thyroid cartilage had become diseased. In those instances where only the common form of sore throat, met with in scarlatina, existed during life, nothing particular was found after death. The immense swelling of the tonsils and arches of the palate, had in great part subsided, and the other appearances of inflammation receded. The tongue was constantly much shrivelled and covered with dark sordes; at times, too, it was remarkably rough, apparently from the protrusion of the papillæ. No ulceration was met on it, though it was often exceedingly sore during life.”

The sequelæ of scarlatina are also carefully noticed by Dr. K.; and in the second chapter, we have a very full account of the symptoms, illustrated by cases, to which we refer the reader.

We might at first suppose that the diagnosis in this disease is sufficiently plain. However, we quite agree with Dr. Kennedy that it is not always so. He observes:

“There were three diseases which came under my own notice, and which it was possible to have confounded with the scarlatina of the late epidemic. Neither am I speaking here of the earliest stage,

(when, as of course happened to every one, it is not possible to name the disease, at least for some hours) but of the time when the disease, of whatever nature it chanced to be, was fully formed. The first of these was Asiatic cholera. It may not appear that there could be any possibility of mistaking the two diseases, and yet I have been brought to see cases, where, from any examination of the patient, it was not possible to distinguish. I found such patients with livid extremities, and pulseless, and these symptoms accompanied by vomiting and purging; and had there been no history of the case, it might as well have been called cholera as scarlatina. On inquiry, however, it turned out that the attack had commenced with sore throat, followed by eruption over the whole body: hence the nature of the case was then made evident. It is scarcely necessary to observe, that when I saw them the eruption had disappeared. In one case of this sort which I saw, another patient lay in the same room with the eruption of scarlatina fully out: here of course no difficulty was experienced. The second disease, which it was sometimes not easy to distinguish from scarlatina, was measles, a disease which for many a long day was confounded with it, and which, from many of the symptoms being so similar, is still very likely to be mistaken for it. Books speak of a number of distinguishing features between the two, as the premonitory symptoms, the nature of the eruption, the presence or absence of desquamation; and these as a general rule answer very well: but cases are ever occurring (and some of them came under my notice during the late epidemic), where these distinctions were of no avail. In the diagnoses of such cases, the state of the throat has appeared to myself the best mark to be guided by: even here, however, there was some difficulty, for cases of measles were by no means unfrequent, where ulceration of the tonsils existed. As far as I have seen, however, it was rather a state of excoriation than ulceration, and it always appeared to want that generally diffused redness so characteristic of scarlatina. Neither did it ever appear to increase with the other symptoms, nor to give any trouble to the patient.

“The third disease, and the one which it was much the easiest to confound with scarlatina during the epidemic, was typhus fever. Nor is this so much to be wondered at: the patients were often admitted into hospital in such a state, that they could give no account of themselves; and as to any distinguishing mark to be derived from the nature of the eruption, or the state of the throat, it was literally out of the question. Cases have been already given (and I saw many such), where the eruption could not by possibility be distinguished from petechial eruption of typhus fever; and as to the state of the throat, any one who has ever looked into it, in cases of bad typhus fever, must know that it then very constantly presents a degree of redness and apparent soreness, which might readily indeed pass for the sore throat of scarlatina. Add to this, that the class of patients I allude to, very generally presented all the symptoms of what has been called the typhoid state; and I think there were enough of cir-

cumstances to make the diagnosis, to say the least, difficult, and in the absence of any history of the case, sometimes impossible. The length of time the patient had been ill, as well as the period when the eruption had appeared after the commencement of the attack, were of course the guiding points in the diagnosis."

As to the prognosis, Dr. Kennedy describes most truly the uncertain result of even simple cases :

" No human foresight, I believe, could tell what course the very simplest case might take, nor at what moment a trifling swelling might appear in the neck, which would subsequently cause the death of the patient. Neither did apparent convalescence give any ground for a secure prognosis, of which there has been sufficient proof in the foregoing pages."

The principal points upon which the prognosis was based, are very well laid down. We quote them at length.

" The longer the attack seemed to be hanging over the patient before any actual symptoms appeared, it seemed to be the worse ; and when it did commence, the more sudden its invasion, and the greater progress the symptoms made in a brief period, as for instance three or four hours, it was always the worse. If a medical man were called early in the disease, and found the tonsils already much swollen, or the eruption already fully out on the chest, he might be certain that the case would be a very severe one : or if, in place of either of these, he merely found that there was some swelling of the hands and face, he might come to the same conclusion. Any sense of fainting at the commencement of the attack, or any extraordinary depression that the other symptoms did not appear to account for, were always to be viewed with suspicion.

" The late epidemic afforded numerous opportunities of confirming all the remarks that authors have made in reference to the eruption. Thus, when it appeared too early or too late, or when it presented anything of a flitting character, the case ever required attention. It appeared to be particularly unfavourable, too, when it merely came out in patches, of which cases have been already detailed. The quantity of the eruption seemed to be of more consequence than the quality : from books, one would suppose that an eruption of a dark colour was necessarily unfavourable : in the late epidemic, this was by no means constantly so. Some of the worst cases which recovered had an eruption of a very dark hue ; and on the contrary, in some of the very worst cases which were met with, it was of an unusually bright red tint, and on the abdomen often presented one sheet of vivid redness. This last point has been particularly noticed by Dr. Graves, and it is one of considerable importance. It is a point in which the last epidemic, as far as I know, seems to have differed from any other on record.

" There are still two other points connected with the eruption,

which, though spoken of before, must be again alluded to, as bearing directly on the prognosis. One is where, after an eruption is fully out, another crop of a totally different character from the first is superadded. Any cases of this sort which I have yet seen have been fatal. It is, if I recollect right, Grant in his work on Fevers who mentions a similar circumstance occurring sometimes in typhus fever. The second is where the eruption goes on increasing in intensity from hour to hour, at a time when from the other symptoms present, one would be led to expect that the contrary would take place. This I have seen happen when the most obstinate vomiting and purging were also present, a fact, by the way, which goes to prove that the coming out of the eruption is not so much under the influence of purgation as many may suppose. Cases of this sort are nearly inevitably fatal: when looking at them, they have given me the impression that the system was supersaturated with the poison; in fact, as if the one patient had taken in what would be sufficient to prove fatal to three or four. Lividity of the hands and feet, no matter at what period it was seen, and even if it afterwards disappeared, was always of unfavourable omen, as was also any coldness of the surface generally, or any signs of the irregular distribution of heat. Too high a temperature was better than too low a one; but in a case where there was anything of *calor mordax*, it was very apt to be followed by some serious sequela.

“ The tendency to chills, though only for an instant, and accompanied by what is called goose-skin, was exceedingly unfavourable.

“ When there was any extraordinary rapidity of the pulse, it was always a serious case. I saw several, however, where for some days it beat upwards of 140, and yet they ultimately did well. These were all adult females. On the contrary, I met fatal cases, and in females too, where till within a few hours of death the pulse did not exceed 108. A pulse of 130 was in a man a most serious symptom, more particularly when accompanied by weakness.

“ Vomiting at the beginning of the attack was favourable, if not too long continued; but any recurrence of it, after it had once ceased, was ever to be looked upon with alarm. But probably, of all the single symptoms, the state of the bowels was the most important one to pay attention to. In very many of the most severe cases, purging played a prominent part. I do not mean by this to assert, that it caused the case to be a severe one; but merely that its presence showed a most serious form of disease. Its appearance at the beginning of the attack was of importance; but it was still more so, if it then ceased, and again recurred. Many of the cases which have been detailed afford but too much proof of this. Even what might be set down as merely an irritable state of the bowels, ever required prompt attention; as, for instance, where an enema, or a purgative of the mildest class, produced severe effects. It was not only, however, in uncomplicated cases of the epidemic, that purging was an important symptom; but also, because in these cases, above all others,

the sequelæ were most likely to make their appearance : and generally those of the worst description ; such as the formidable swelling of the neck, or purulent effusion into the joints. Every one knows that these remarks apply with equal force to cases of typhus fever, where any thing of an irritable state of the bowels, to say nothing of purging, always betokens danger. For these reasons, then, no single symptom, I must again repeat, appeared to me of more consequence through the whole epidemic, than the existence of purging, and this at any period of the attack. It must not, however, be inferred from this, that constipation was necessarily a favourable symptom ; though I believe it to have been such in the greater number of instances. Fatal cases did occur often enough, where there was no purging whatever ; but the point I wish to bring specially under notice is this, that its presence to any degree, or at any period, ever denoted danger.

“ As a general rule, the state of the throat gave little indications for the prognosis. I saw cases recover where the ulceration was very extensive, and others where the swelling was so great as to literally cause the tonsils to meet. There were, however, three states of it, which ever shewed severe disease ; the first was, where there was little if any swelling, but a great deal of congestion, sometimes of a livid hue ; the second was, where there was any tendency to œdema of the glottis ; and the third, to diphtherite. I say *tendency*, because under the circumstances of scarlatina being present, a smaller amount of disease in the throat appeared sufficient to destroy life, than would have been required had there been no second disease present. The more able the patient was to assist himself, the more favourable in general was the result.

“ It has been before stated, that any appearance of the tongue getting dry about the fourth or fifth day ever required attention : it either showed that the patient was about to fall into a typhoid state, or else to be attacked with external swelling of the neck.

“ As to the symptoms referrible to the brain, convulsions and coma were, of course, both most serious ; but of these two, the former was more favourable than the latter. It has never been my lot to see any case of scarlatina recover, where once profound coma set in. Raving to a high degree, particularly any thing of a violent kind, was ever serious ; still there were no cases came under my notice where recovery was more remarkable, than in instances of this very kind. This I believe to be owing to art having more power over them than other cases, of which there will be occasion to speak again.

“ The great injection of the globe of the eye, together with the flickering about of the pupils, of which I have spoken before, were signs of bad omen, as was also a permanently contracted state of the pupil, a point which has been particularly noticed by Fothergill.

“ When the convulsions alternated with coma, or when the latter was accompanied with involuntary dejections, it is scarcely necessary to add that the case was nearly hopeless.

“ If other symptoms were comparatively favourable, any unusual restlessness was quite enough to excite alarm. I saw fatal cases, where it appeared to be the most striking symptom; in these it existed to a degree I never saw equalled, except in Asiatic cholera.

“ As regards the prognosis, I shall only here allude to one of the sequelæ of the epidemic, I mean the swelling of the neck. Even when it only attacked one side, it was a most serious symptom; and the younger the patient was, the worse: when it engaged both sides, it was of course still more dangerous; and I never saw any case recover, when the swellings met on the middle line. The patient had a worse chance, the earlier in the disease the swellings appeared; for then convulsions or coma were much more apt to supervene than at a more advanced period, when the danger arose more from extensive sloughing, pure weakness, or possibly hæmorrhage. Any subsidence of the swellings, which was often to be observed, did not in my experience give the patient any increased chance of life.”

In the treatment of this formidable epidemic, Dr. Kennedy derived great benefit from emetics at an early period of the attack; but he objects to both tartar emetic and hippo. The one he proposes is common mustard, in doses of one or two teaspoonfuls.

Warm baths, used with discrimination, were beneficial, and also cold effusion to the head. With regard to blood-letting, Dr. Kennedy remarks:

“ The general run of cases through the late epidemic entirely forbid the employment of active treatment, among which of course bleeding must be placed. The only case in which I found general bleeding of benefit were in those of a few adults, who were attacked by severe sore throat only, and high fever of the inflammatory kind; but even these were exceptions to the general rule, so that as a whole the remedy, as used in this way, was seldom employed. During a part of the years 1838–39, the type of the disease was of a somewhat more inflammatory kind than at any other period of the epidemic, and I then saw several cases treated by a single general bleeding, and with decided benefit. These cases were under the care of the late Dr. Crampton, and there was never more than $\frac{3}{4}$ x. of blood abstracted from an adult.

“ Local bleeding was much more generally used, and more beneficial than general. When there was great swelling of the internal fauces, and no particular circumstance to prevent it, the application of some leeches was, in the majority of cases, followed by marked relief. The raving, which was such a constant symptom, seemed, however, to be little influenced by local bleeding, so much so that I latterly gave up the plan of applying leeches to the head. In a few instances, where the arches of the palate and uvula were more engaged than the other parts of the throat, three or four leeches applied to the nostrils gave great relief. In these cases, there was very

commonly spontaneous epistaxis. On the whole, bleeding was a remedy which required great caution in its use during this epidemic, and in those cases where any doubt existed of the propriety of adopting it, either generally or locally, it was much better to leave it undone."

Dr. K. found the "stimulant plan of treatment, modified according to the circumstances of the case," of very general use, and of course the use of purgatives objectionable.

With regard to the employment of opium, the author observes :

" There were three forms of scarlatina in which I made use of opium : the first was the class of cases of which examples have been already given, where about the third or fourth day the tongue began to get dry, and typhoid symptoms soon followed, lasting from eight to fifteen days ; in many of those cases, the patients exhibited signs of extreme depression and weakness, and it became a matter of great moment to husband the strength as much as possible. Besides other means, a full opiate at bed time was here found of great service ; when it did not induce sleep, it had at least the effect of giving a quiet night, and very seldom indeed did the patients express themselves otherwise than as much the better of it. It may be observed that the class of cases I am now speaking of, were very generally met in adults. This plan of treatment was particularly useful in those cases (and they were by no means uncommon) where, after other symptoms seemed rather on the decline, still there was a continuance of raving. Nothing under such circumstances seemed to bear a comparison with opiates, in allaying this symptom.

" The second class of cases in which I used opium, was that in which head symptoms took the lead, it might be before, but always after the appearance of the eruption ; cases in which, in fact, its coming out did not improve the general symptoms, particularly the raving. In some of these cases opium was decidedly useful ; though it must be admitted that in others it did not appear to exercise the slightest influence, the disease pursuing its course to a fatal termination uninterrupted, as if so much water had been given. This was the class of cases which bore the strongest analogy to those cases of typhus fever, in which Dr. Graves had used tartar emetic and opium with such signal benefit, and hence I was led to give it a trial. More experience than it has been yet in my power to bring to bear on this point, however, is still required, but from what I have seen it appears to me well worthy of a farther trial.

" The third class of cases in which I used opium was that in which diarrhoea made its appearance in the progress of the case. In these, I regret to say, neither opium nor any other treatment produced any permanent effect, at least in the great majority of them. The diarrhoea might be, and was indeed often checked, but it was sure to recur ; and even when it did not happen to do so, the disease, as far as I have seen, still pursued its fatal course. Of this class of cases, in-

stances have been already given ; Fothergill, too, has drawn special attention to them."

In conclusion, Dr. Kennedy remarks :

" To give then at one view the line of treatment on which I placed most dependence in the late epidemic, and which I myself used in the majority of instances, the following may be stated :— Stimulant emetics—warm baths—tepid or cold sponging—cold effusion to head—internal stimulants—diluent—free application of nitrate of silver to throat, followed by soothing treatment—occasionally, the internal administration of opium. Such, modified by the peculiarities of each individual case, was the plan of treatment adopted, and the one which, under analogous circumstances again, I would certainly have recourse to."

We have thus cursorily noticed the principal points of interest in this volume, preferring to allow the Author to speak for himself, rather than to give our own version of his opinions.

As a contribution to the history of a formidable epidemic, the volume deserves great praise. Dr. H. Kennedy has evidently employed both industry and acumen in his observations of the disease, and has noted down clearly and concisely what he has seen. We strongly recommend the work to all our readers, as containing very valuable practical observations. It is extremely creditable to the Author, and likely to be very useful to the profession.

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

SESSION 1842-1843.

Ninth Meeting, 22nd January, 1842.

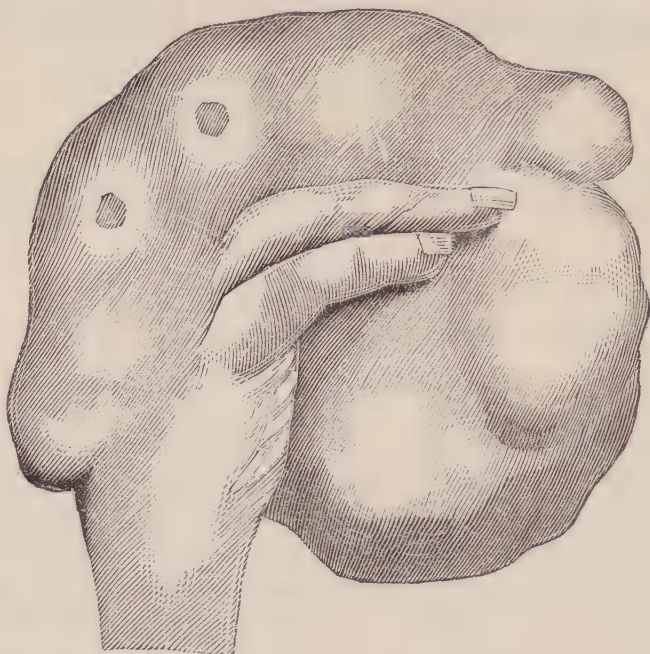
Mr. CUSACK in the Chair.

1. *Benign Osteosarcoma*.—Mr. Adams laid before the Society some examples of the disease termed Benign Osteosarcoma, which had affected the hand and foot. For an opportunity of presenting to the Society the most remarkable of these specimens, he was indebted to Mr. Cusack, who, on Thursday last, amputated at the wrist joint the much deformed hand he now presented to the Society for examination. The following is the history of this case:—Mary Bennet, æt. 45, was admitted into Stevens's Hospital in the beginning of January, 1842; she had an emaciated appearance, and a sallow anæmic look; her right hand was converted into a large globular mass, about the size of a melon, and seven inches in diameter; the middle and



ring fingers, with their metacarpal bones, appeared to have been the principal seat of the disease: around these centres, the great bulk

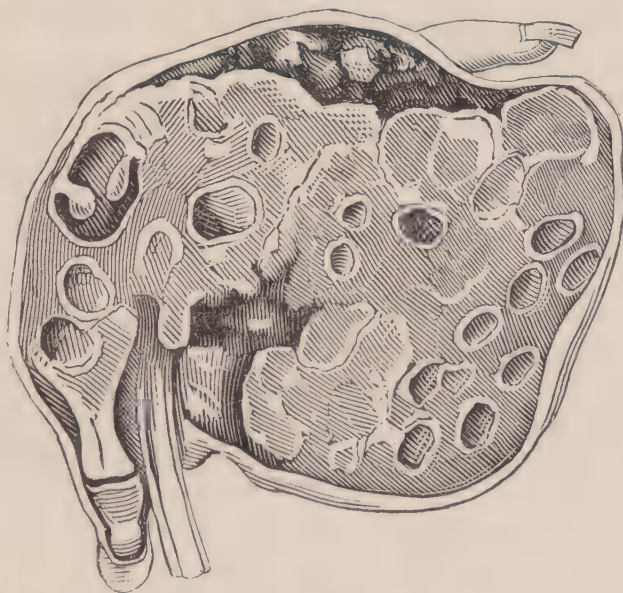
of the tumour had formed, so that the index and little finger were widely divaricated from each other; the two last phalanges of the second finger remained unaffected by disease, and projected most con-



spicuously from the back part and the convexity of the morbid mass; the index, ring, and little fingers were, from the size of the tumour, rendered incapable of performing their functions, and were in a state of atrophy from want of use; there were numerous little eminences over the surface of the tumour; some of them were soft, and gave to the touch, a doubtful feeling of fluctuation; the skin over some of them had ulcerated, and through the fistulous orifices which remained, a thin, fœtid matter exuded; at the lower part of the tumour, there existed a deep and foul ulcer, the frequent bleedings from which exhausted the patient. The disease originated in a swelling of the head of the metacarpal bone of the second finger; for three years the swelling slowly increased, and seven years elapsed before the ring finger became similarly affected, the integuments remaining during all this period, perfectly sound. The patient stated that for nearly eight years she suffered no pain; but about the end of this period, the motions of the fingers began first to cause her uneasiness, and occasionally pain was felt at night when the hand was at rest. During the last twelve months the tumour, she thought, had doubled its former size, and the skin covering it, in different parts, became red and inflamed, and finally ulcerated. The continued ichorous and fœtid discharge which took place from the large ulcer already alluded to, the inflammation and suppuration of several portions of the morbid mass, and, above all, the repeated bleedings, accounted for the exhausted condition and sallow aspect of the patient, and called for the amputation of the disease, and which Mr. Cusack performed at the wrist joint on Thursday morning last.

Inspection.—The carpal bones were free from disease; a longitu-

dinal section has been made of the morbid mass; the line of this section passes longitudinally through the metacarpal bone of the second finger: this bone is shorter than natural, and its lower extremity enlarged: the section shows this extremity to be excavated by a hemispherical cavity, lined by a smooth vascular membrane, and which had been occupied by an albuminous fluid: the surrounding bone was hypertrophied. Mr. Adams was of opinion, that, so far as this finger was concerned, the head of the metacarpal bone was the starting point of the disease. There was no bony shell to the tumour, nor osseous septa discovered, by making various sections of it. The phalanges of the fingers, projecting from the tumour, had lost all direct bony continuity with the phalanges, to which they originally belonged: the surface of the section of the tumour presented a cartilaginous aspect, as if a soft, semi-transparent, cartilaginous material had been deposited in spheroidal-shaped cells, of diameters varying from one to ten lines: the interstices, between the cysts, were occupied by a highly vascular cellular membrane: the cysts were lined by a smooth membrane, and portions of the cartilaginous material, about the size and form of a garden pea, could be turned completely out from several of their little cysts: one of these little cysts, when emptied of its albuminous fluid, was found to contain two small semi-cartilaginous bodies, attached by slender pedicles to the internal surface of the cyst.*



The larger globular masses had, some of them, less the appearance of cartilage than the smaller, and presented somewhat the aspect of

* "The simplest and most elementary organic form, with which we are acquainted, is that of a cell containing another within it (nucleus) which contains a granular body (nucleolus); this appears from the interesting researches of Schleiden and Schwann, to be the primary form which organic matter takes, when it passes from the condition of a proximate principle to that of an organised substance."—*See Todd and Bowman's recent and valuable Work upon Physiological Anatomy.*

steatomatous matter, still surrounded by cysts ; again some of them appeared to have undergone a species of brownish yellow softening or degeneration, probably the result of a slow chronic inflammation and some imperfect effort at suppuration. This case appeared to Mr. Cusack very similar to one related by Severinus, of which the plate Mr. Adams held in his hand was a representation, and in which the morbid growth is reported to have been successfully extirpated, and the index finger and thumb to have been saved to the patient. Mr. Adams was not sure whether Mr. Cusack, when he operated, was acquainted with a case of benign osteo-sarcoma of the hand, which had been treated by Dr. O'Beirne in Jervis-street Hospital, in which all the fingers were involved in the disease, except the little finger and thumb ; these Dr. O'Beirne conceived it possible to save, and accordingly cut out the immense morbid mass which intervened between them : the wound healed, and the patient, a land surveyor, reported nine years after the operation, that the little finger and thumb, though so far separated from each other, were very useful to him.* It was a matter of much deliberation with Mr. Cusack, as to whether he also might not in this case adopt a similar practice ; but he ultimately determined upon amputating at the wrist, in consequence of the very exhausted state of the patient, and because he had known a similar case of disease recur, after the diseased finger had been removed and dissected out from the rest of the fingers : the operation was performed in a few seconds.

Mr. Adams said that in Mr. Cusack's case the disease had originated deep in the head of the metacarpal bone, so that at no period of the disease could any other operation have been performed than the complete amputation of the diseased bone, but Mr. Adams had seen the disease affecting the phalanx only superficially, and one case at least, in which he had to regret that the morbid growth had not been cut off from the bone from which it sprung ; he was led to this opinion from having examined a finger, of which he now presented the preparation, and which had been amputated by the late Dr. M'Dowel ; both Dr. M'Dowel and Mr. Adams were of opinion that amputation was necessary, in consequence of the marked incurvation of the phalanx of the finger from which the disease sprung, and which they considered a sufficient indication that the diseased growth had originated deep in the substance of the bone ; the preparation, however, shewed, that although the phalanx was somewhat softened, yet that the interior of the bone was not by any means assimilated in its structure to the diseased growth, which seemed to have sprung from the outer lamina of the phalanx : Mr. Adams was of opinion that, except where the disease has very evidently originated deep in the cancellated texture, that the patient should get the chance of recovery, which the cutting off of the diseased growth afforded, rather than be at once subjected to the complete amputation

* See Todd's Cyclopædia of Anatomy, Article "Hand, abnormal Anatomy of."

of the bone. To prove that the latter proceeding is not always necessary, he produced to the Society a cast of the foot of a patient who had been under his care in Jervis-street Hospital, in 1833. This lad, at 18, had been sent from the country to be relieved of an osteo-sarcomatous tumour, which grew from the inner side and dorsum of the left foot;



it had attained the size of a lemon, and sprung from the metatarsal bone of the great toe: it was of a firm consistence throughout, and slightly uneven on its surface, the skin was healthy: some difference of opinion arose, as to what operation was most advisable, some considering that amputation of the great toe and its metatarsal bone was the mildest measure that could safely be resorted to. Mr. Adams (persuaded by the appearance of the tumour, the mobility of the skin, the duration of the disease, the perfect condition of the boy's health, and the freedom of the tumour from pain) decided that he would at all events try the experiment of removing the tumour at its basis from the metatarsal bone; this he accomplished without any difficulty, partly by the knife, and partly by the aid of a firm metatarsal saw; there was but little hæmorrhage. A section of the tumour shewed a bony shell, and within it a cartilaginous structure, with membranous septa: no fluid was contained in the tumour: the patient left the hospital perfectly well. —(*Museum, Richmond Hospital.*)

2. *Cerebral Disease.*—*Calcareous Deposit in the Brain.*—*Paralytic Contraction of Limbs.*—*Ptosis.*—Mr. O'Ferrall said, the case he was about to communicate to the Society at that meeting was one of remarkable cerebral lesion, accompanied with diseased condition of the eye and its appendages of one side, and paralysis of the limbs of the opposite side: there was also an abnormal condition of the hip joint, resembling the congenital luxation of authors.

The subject was a young man, admitted into St. Vincent's Hospital in a typhoid condition, in the latter stage of scarlatina. It was observed that the arm and hand of the left side were contracted, atrophied, and fixed against the chest. The lower extremity shortened,

and permanently rotated inwards. There was ptosis of the right eyelid. The cornea of the right eye was fungoid, and vision was completely lost. He died soon after admission.

The hemispheres were found equally developed; the brain apparently firm and healthy. Upon turning up the base, the right optic nerve was found to be not more than one-third the thickness of the left: the right corpus albicans was also smaller than the left: and the right crus was narrower and flatter. Upon dissecting from above downwards, removing the velum interpositum, and the pineal gland, the scalpel struck, between the nates and right optic thalamus, against a hard sonorous substance, which, upon further examination, was found to be a bone, the size of a plum-stone, and similar to it likewise in the rough processes on its surface, imbedded in the right crus, and pressing anteriorly on the optic thalamus, posteriorly on the right natis. [Mr. O'F. here exhibited the preparation, and a coloured drawing.]

The right eye was found to be extensively diseased. Besides the ptosis and fungoid cornea perceptible during life, the vitreous humor was now ascertained to be of diminished consistence; the pigment very deficient; a conical depression was in the situation where the optic nerve perforates; and on both surfaces of the crystalline capsule, were small white opacities, which, if the patient had lived, would probably have become such ossifications as Mr. Smith had described on a former occasion.

The shoulder joint presented nothing unusual. At the hip-joint, the thigh was firmly flexed, and rotated inwards: the head of the femur was flattened; its cartilaginous surface was diminished in extent, and its figure appeared elliptical; the ligamentum teres was very vascular: the acetabulum was deeper than natural, and was also higher up on the dorsum of the ilium. The symptoms of this affection of the hip-joint, during life, resembled those of dislocation.

Mr. O'F. having pointed out the several circumstances in the preparations, said they would be imperfect without the history of the case, which was briefly this: The patient had been healthy and active while a boy, up to about four years of age; he then had worm fever, which was succeeded by strabismus divergens and ptosis; disorganization of the right eye gradually followed. After this, the opposite side became affected with spasmodic twitchings, resembling chorea; then the leg began to trail, and at length the extremities, on the left side, fixed themselves into a state of permanent contraction. The intelligence of the patient was not all impaired; on the contrary, he exhibited a remarkable taste for learning languages, and had made some progress in Hebrew, Greek, and French.

The condition of the parts, as observed in this case, was worthy of attentive consideration. Bony degeneration of the membranes of the brain was not uncommon, but calcareous deposits, in the substance of the brain, were exceedingly rare. And again, the disease of the hip-joint was very remarkable; it was not congenital, for it did not occur

until the patient was more than four years of age. Neither was it a luxation. The shortening of the limb evidently depended on atrophy of the thigh bone, together with *a change in position of the acetabulum itself*. Mr. Adams, in the Cyclopædia of Anatomy, had described abnormal conditions of the joint; but the diseased condition of that joint, in the present case, was one as yet undescribed.

Mr. O'F. alluded to the connexion between the state of the brain and the other lesions he had been describing. He referred to Mr. Smith's cases of ossification within the eyeball, accompanying atrophy of the optic nerve. He suggested that the relation of the calcareous mass, to the origin of the third pair, might assist in explaining the occurrence of the divergent strabismus and ptosis. And a close connexion between disease of the brain, and the form of the paralysis present in this case, has been mentioned by Andral, and has been also observed in our own country by Mr. R. W. Smith, in communications already made to this Society. Mr. O'F. concluded by alluding to the writings of M. Guerin, and of Dr. Marshall Hall. The phenomena of the present case, being in accordance with the opinions of the latter gentleman, who maintains, that in paralyses of cerebral origin, the voluntary muscles are abandoned to the controul of the spinal nerves, and hence the involuntary twitches, and ultimately the permanent contraction and deformity which existed in the present instance. This excito-motary power, resident in the spinal marrow, is the source of all those spasmodic contractions, which stimuli, acting on the spinal system as strychnine, and more directly on the limbs themselves, are capable of producing. Dr. Marshall Hall had done much to elucidate this department of pathology.

3. *Malignant Disease of the Stomach*.—Dr. Law observed that within the last twenty-four hours he had met with two cases illustrating a fact often noticed in pathology, viz. how the symptoms arising from an organ similarly or sympathetically affected observe those of an original affection; one was a case of pneumothorax, in which obstinate irritability of the stomach was the permanent symptom for some time before death, and yet examination of the body exhibited no appearance of the organ to account for its affection during life. Dr. Law attributed the irritability of the stomach to the nervous connexion existing between the lungs and stomach through the medium of the pneumogastric nerve, and considered it analogous to the irritability exhibited in pertussis, in which not unfrequently every paroxysm of cough terminates in vomiting. The other case was one in which the stomach was the seat of extensive malignant disease, and in which the symptoms were first very obscure, and always disproportionate to the amount and nature of the organic lesion. The subject was a man aged 50, of most temperate habits, but very sedentary. Two years before his death he first began to complain of oppression of his breathing, and this constituted his only complaint for a considerable time. About a year from the time of his first feeling of indisposition he got influenza, at the time very prevalent, and then first felt pain in the

epigastrium, with a sense of soreness ascending up the throat. His tongue now exhibited a morbid redness : he began to lose flesh, which was more apparent as he was naturally of a very full gross habit of body. Careful examination now discovered a distinct fulness in the epigastrium. The pain in this situation was never severe. About four months before his death he was seized with vomiting, and discharged at least a quart of a dirty, thick, viscid fluid, from which, after it had remained for some time in a vessel, a mixture apparently of blood and purulent matter deposited. After the vomiting the fulness of the epigastrium subsided. His appetite completely failed. He was continually throwing up tough, viscid mucus from his throat. His strength gradually declined, and at length his feet began to swell. He expired complaining very little of pain of the stomach even when pressed all through his illness. All the viscera of the thorax and abdomen except the stomach were quite healthy. The stomach was closely applied to the concave surface of the liver, and adhered to it. When opened almost its entire cavity was filled up by an irregular broken down doughy mass which did not involve either orifice. This mass was of a soft pulpy consistence. It was not easy to determine whether it was cancerous in its nature or not. It seemed to involve all the tissues of the organ except the external serous covering. The section of the organ not involved in the disease did not exhibit the hard resisting structure of scirrhus, nor was there any disease of the liver. Dr. Law remarked how obscure the symptoms of this affection of the stomach were at its early stage, oppressed breathing being the first and sole complaint for a considerable time ; and even when the symptoms did more distinctly point to the stomach as the seat of mischief, they then bore no proportion to the extent of the organic lesion.

This case reminded Dr. Law of one which had been under his care some years since, the subject of which was a man about fifty years of age, who after having sustained a severe reverse of fortune, fell into ill health. After two years of illness, during the greater part of which he had been under the care of several of the principal medical practitioners of Dublin, he was admitted into Sir Patrick Dun's Hospital. A very few days before his admission, he began to complain of a difficulty of swallowing, the seat of which he referred to behind the ensiform cartilage. He found it quite impossible to swallow solid substances, and even fluids seemed to pass down very slowly, and as it were to filter through the seat of the obstruction. Dr. Law attempted to pass a tube into the stomach, but experienced a difficulty after about four inches of the instrument had been introduced. He immediately withdrew it, attributing the obstruction to some malignant growth in the lower part of the œsophagus. A careful examination discovered a tumour, although not very defined, in the epigastrium. The sallow, greenish-yellow complexion of the individual, and his extreme inanition, with a sense of uneasiness in the epigastrium, although not very distressing, yet always enough to make him uncom-

fortable, made Dr. Law regard it as a case of cancer of the stomach, which, by its extension into the œsophagus had given rise to the recent symptoms of difficulty of swallowing. Examination of the body discovered a large irregular fungoid mass, made up of a congeries of tumours, constituting a cauliflower excrescence, which occupied a considerable extent of the cavity of the stomach, but which seemed principally to grow from the lesser curvature. A small tumour connected with the large mass so occupied the anterior orifice of the organ as to leave scarcely any passage from the œsophagus. The pyloric orifice was quite free from disease. The reason of Dr. Law's alluding to this case, was, that so obscure were its symptoms, until the palpable one of difficult deglutition discovered it, that the stomach was never considered the seat of the disorder, and a sympathetic palpitation of the heart made this organ incur the suspicion of being the one chiefly afflicted. Dr. Law had met with several cases of malignant disease of the stomach, whose existence was not suspected during life, because that the disease occupying neither orifice of the organ gave rise to no marked symptoms, at least to symptoms less appreciable than those that are found when examination after death can discover but little, if any, deviation from the normal condition of the organ.

Tenth Meeting, 29th January, 1842.

Professor HARRISON in the Chair.

1. *Tubercular Cavity in the Lung, opening into the Sac of the Pleura: Pleuritis.*—Doctor J. Ferguson laid before the Society the recent specimens in this case, the subject of which was a man, æt. 40, who died during the last week in Sir P. Dun's Hospital: he had been admitted August 12th, with symptoms of pleuritis, with effusion, from which he so far recovered as to be able to leave the Hospital September 5th; but, October 12th, he returned, with his former symptoms much aggravated: the right side of the chest was very sonorous on percussion, and exceeded the dimensions of the opposite side by one inch, and the intercostal spaces were enlarged: auscultation detected amphoric resonance; but there was no metallic tinkling: nor did succussion produce any sound, until about three weeks previous to the patient's death, which occurred 21st January.

Autopsia.—When an opening was made into the chest, a rush of air took place from the right cavity of the pleura, which contained nearly two quarts of puriform fluid, and the membrane itself was covered with a thick layer of lymph: in the apex of the right lung, there was a fistulous aperture, by which a communication was established between the sac of the pleura and a large ulcerated cavity in the lung, into which there opened several bronchial tubes: the lungs were everywhere studded with small tubercles, and the mesenteric glands contained scrofulous matter: numerous ulcers occupied the small intestines, although there had not been any severe diarrhœa during life. Dr. Ferguson thought it remarkable that there was, in this

case, no metallic tinkling, and was of opinion that amphoric resonance occurs when the fistula opens into that part of the pleural sac, the contents of which are æriform, and the metallic tinkling occurs when it opens into the fluid.

2. *Perforating Ulcer of the Appendix Vermiformis*.—Doctor Lees laid before the Society some recent specimens of disease of the intestines in children. The first were from a child four years old, that had died during this week in the South Union Hospital. This child had been suffering from chronic diarrhœa, and was in a state of great emaciation: the discharges from the bowels were intermixed with shreds of lymph, in the membranous form, but there were no sanguineous dejections: there had been incessant vomiting during two days previous to death: the large intestine was very vascular, and all its coats thickened: beneath the mucous membrane were several ecchymosed spots: the vascularity was greatest in the rectum: the lower portion of the ileum also was very vascular, thickened and coated internally with adherent lymph: the coats of the stomach were thickened, and there was a deposition of lymph on its mucous surface, similar to that on the ileum: the mucous membrane itself was of a brown colour, and very vascular, presenting an appearance similar to that called *mammillary* by Louis, and *granular* by Hodgkin. From the pylorus to the ileum, the intestine had no unhealthy appearance.

The next specimens were from a child of 15 months old, which had been admitted only a week previously, at which time it was described to have been labouring under chronic diarrhœa. On examination of the body after death, the mesenteric glands were found affected by tubercle: the mucous surface of the large intestine was thick, warty, and vascular: but the most remarkable lesion was in the appendix vermiformis, about the middle of which was observed a large patch of green lymph, which covered an ulcer that had nearly perforated into the peritoneal cavity: the mucous membrane appeared to have been removed round a large portion of the tube of the appendix, and in the centre of this ulcerated part, was the minute perforation, which was only prevented from communicating with the sac of the peritoneum by this deposit of bright green lymph: there was no peritonitis. Dr. Lees said that this case was interesting, on account of the early age of the subject, as, although many cases are on record, and the pathological lesion has been fully described, yet the earliest age hitherto mentioned at which it had occurred, was six years, in a case described by Dr. Burne, in his Memoir on Taphloenteritis, published in the Medico-Chirurgical Transactions.

3. *Aneurism of the Abdominal Aorta*.—Mr. O'Ferrall communicated a specimen of aneurism of the abdominal aorta, near the cœliac artery, which had been given to him by Doctor Aldridge. The subject of this case, when about 18 years of age, received a hurt when wrestling, and suddenly felt a pain in the back, which continued. The pain gradually increased, and the patient became nearly paraplegic. At this time, a soufflet became perceptible beneath the xiphoid carti-

lage, and the pulsations of the femoral arteries became almost imperceptible: the bowels obstinately constipated. A violent pulsation of the heart, sufficient to raise the bed-clothes, accompanied these symptoms; but percussion showed that the heart was not enlarged. After lying for some months in this state, he recovered so far as to be able to walk three or four miles a day; the soufflet disappeared; the pulsation in the femoral arteries returned; and the alvine discharges became natural. His death was sudden, and preceded by severe pain in the abdomen. Upon examination of the body, the aneurism was found between the crura of the diaphragm, half thoracic, and half abdominal, filled with adherent and loose coagulum, except a passage the ordinary size of the artery: the bodies of the corresponding vertebræ were nearly entirely absorbed. The aneurism projecting forward the heart, accounted for the apparent pulsation of this organ, observable during life. Mr. O'Ferrall observed that what was most remarkable in this case, was the complete disappearance of the principal symptoms which took place some time before death, while the mechanical relation of the parts remained unchanged.

4. *Vegetations on the semilunar Valves, causing Patency.*—Dr. Stokes said, the specimen which he then produced to the Society, was one of interest in the diagnosis of permanent patency of the aortic valves. The subject of the case had been three months ill, and was subject to difficulty of breathing on taking exercise. There was a double bellows murmur along the sternum, and visible pulsation of the arteries near the surface. The diagnosis was made in accordance with the rules laid down by Dr. Corrigan. When the body was examined after death, the amount of the patency of the aortic valves was discovered to be less than had been anticipated from consideration of all the symptoms during life. The valves were patent to only a slight degree. Water poured into the aorta passed into the ventricle, proving that regurgitation might have happened during life. The imperfection of the valves appeared to be caused by a vegetation on their cardiac aspect. There was also considerable dilatation of the ascending aorta. Might not this, inquired Dr. Stokes, have a similar effect to permanent patency of the valves in producing the throbbing? In both cases there is a cavity and regurgitation into it of a column of the blood.

Eleventh Meeting, 5th of February, 1842.

Mr. ADAMS in the Chair.

1. *Inflammation of the lining Membrane of the Gall Bladder—Jaundice.*—Dr. Graves said he had to communicate to the Society a case of jaundice, produced by inflammation of the mucous membrane of the gall bladder. It was remarkable that there was no other morbid lesion detected: the appearance of the recent specimen was accurately delineated in a drawing. Dr. Graves observed that he had never met with any similar case. The subject was a young woman, twenty years of age, of a florid complexion, and who had been usually

in very good health. She was admitted into the Meath Hospital on the 1st of November, 1841, and the account given of her illness was, that five weeks previously she had been seized with pain in the right hypochondrium, which extended towards the epigastric region; for a fortnight afterwards she suffered constant nausea and frequent vomiting; on the eleventh day of the attack, itching of the surface came on, which continued to the fourteenth day, when the jaundice made its appearance. Dr. Graves here alluded to the case of a patient in the Meath Hospital, who had been jaundiced several months, and in whom the itching of the skin commenced two months before the jaundice was visible. The common opinion that the biliary matter in jaundice is deposited on the surface of the chorion is contradicted by these two cases, unless we admit the supposition of its being an imperceptible matter that is deposited. In the present case, after the skin had become discoloured, or about the same time, there was an eruption of herpes zoster about the hepatic region. At the time of her admission into hospital, the skin over the whole surface of the body was deeply jaundiced; the colour had deeply tinged the conjunctiva. The patient saw all objects of a yellow colour, a symptom so rare that Dr. Graves had met with it in only three cases. She laboured also under some degree of fever, and continual thirst. There was pain in the right hypochondrium, not generally diffused, but limited to a point between the hypochondrium and epigastrium, the extent of the painful part was very small; there was no pain in the lumbar region; there was neither dullness, enlargement, nor distention of any part of the abdomen, but the abdominal muscles were spasmodically affected whenever the abdomen was pressed, they then became rigid, and the pain was increased. It was at first conjectured that the jaundice depended on gall-stones obstructing and irritating the ducts, but against this it was observed that the pain had no paroxysms and no remissions. The cause of the disease was therefore uncertain, until ascertained after death by dissection. It was unnecessary to detail the treatment adopted in the Hospital: on the 6th of November, the patient suddenly became delirious after a sudden and great increase of the pain in the side; she became comatose, and sunk gradually until the following day, when the death occurred. Dr. Graves said that he had observed that the cerebral symptoms in jaundice were usually precursors of the fatal termination. When the body was examined, all the tissues were found coloured by the bile, but the viscera were apparently healthy, except the gall bladder, the mucous coat of which was in a state of intense inflammation, highly injected, but the ducts were not inflamed, nor was there any inflammation of the duodenum, or of the stomach: the gall bladder was filled with coagulable lymph, tinged with bile. The case was deserving of attention, on account of the inflammation being so limited; it was evident during life that it was of a very local nature, but its seat would have been unknown if the examination after death had not been made.

2. *Detached Bodies found in Bursæ.*—Doctor Hutton said he wished to lay before the Society some specimens of the bodies found in bursæ. They were removed from the upper extremity of a labouring man, a bricklayer, who about a year ago had sprained his wrist. About six months ago he perceived for the first time a tumour which extended from about two inches above the annular ligament of the wrist to the palm. (The appearance it presented could be seen in the cast which Dr. H. then produced.) There was a sense of fluctuation in the tumour. The fingers were contracted, and the index finger still continues incapable of extension. This patient was admitted into the Richmond Hospital on 19th January. The tincture of iodine was tried as a means of promoting absorption, but no effect was obvious on the tumour. It was then determined to operate. On the 2nd of February an incision was made into the lower part of the distended bursa, and the sac emptied of the foreign bodies. Cold water dressing was applied, and the case was progressing favourably (up to the time of Dr. Hutton's communication). In Dupuytren's cases the after treatment was very different; inflammation was excited in the sac by a seton with the view of obliterating the cavity, but the result was frequently a serious inflammation, and even the formation of an abscess in the forearm. The detached bodies produced by Dr. H. were of several shapes. The greater number were oval, but some were triangular. They consist of a matter of the consistence of rice half boiled; the structure is lamellated, the nucleus soft. As to the nature of these bodies, the opinions are various. Dupuytren considers them to be hydatids or parasitic cysts, but Dr. H. said that he could not by the most careful examination detect any cavity within them, nor any trace of sucking apparatus. Brodie considers them to originate from masses of lymph. Cysts found in the peritoneum were probably of an analogous nature, and these Dr. Hodgkin ascribes to deposits of unorganized lymph, which, after some time, gradually assume a capsular form enveloping some of the fluid of the abdomen. Dr. Hutton inclined to the opinion that these loose bodies owed their origin to effused lymph, that they were increased in size by new deposits, that their shape was modified by the tendons in their neighbourhood, and that even within one bursa there might be some of different ages. He was uncertain whether such as were attached by pedicles might not become completely detached, and he mentioned that his experience of these cases shewed that a return of the complaint after their removal was by no means unusual.—(*Museum, Richmond Hospital.*)

3. *Chronic Rheumatic Arthritis of the Acromio-Clavicular Articulation.*—Mr. Smith presented a series of specimens, illustrative of the alterations produced by chronic rheumatism in the articulation between the clavicle and acromion process; and also a cast shewing the external characters of the disease; the outer extremity of the clavicle was remarkably prominent, rising far above the level of the acromion process, the articulating surfaces were greatly enlarged,

the vertical diameter of that upon the acromion being nearly three-quarters of an inch : they were destitute of cartilage, the articulation was surrounded by a capsule of great strength and thickness ; and containing a plate of calcareous matter, and in the interior of the joint were a few foreign bodies ; the interarticular cartilage had disappeared, the external appearance of the joint resembled in some respect those of luxation of the outer end of the clavicle, from which however it was readily distinguished by passing the finger along the surface of the acromion process.—(*Museum, Richmond Hospital.*)

Twelfth Meeting, 12th of February, 1842.

PROFESSOR HARRISON in the Chair.

1. *Encephaloid Tumours in the Brain and Lungs.* — Dr. Greene said he had to lay before the Society a remarkable specimen of malignant disease within the cranium and thorax, taken from the body of a patient who had been six weeks under his care in the Whitworth Hospital, into which he had been admitted for paralysis dependent on softening of the brain. This man, who was a smith, had been working at his trade up to two months before his admission ; he had suffered pain in the head, and a gradual failure of memory, but was so intelligent up to his admission that the account of his case was taken from himself. He had numbness of the fingers of the right hand, which increased gradually and extended up the arm. When he was taken into the hospital, the fingers of the right hand were in a state of permanent flexure, and the hand was itself flexed on the forearm. The paralysis in this case depended on both pressure and irritation of the brain. This man's sight became gradually impaired, and he was blind before death. When the brain was examined a number of tumours were found imbedded in it ; they were very vascular on their surface, and were each contained in a distinct capsule which was lodged in a corresponding cavity in the brain. These tumours were of the cephalomatous kind. It had been observed that when such tumours are situated only on the periphery of the brain that they only produce pressure, but when this is augmented by their bulk enlarging, then the medullary fibres in the neighbourhood are broken down, the brain becomes irritated, and the paralysis complete ; the mental powers fail and the memory is entirely lost. In this case the pain of the head was in the occiput, to the right of the median line. It was remarkable that there was no pain towards the anterior part of the head, although it might be observed in the specimen that two of the tumours pressed on the anterior lobes. A mass of the cephalomatous matter filled the third ventricle and pressed on the optic thalamus. Doctor Greene referred to Dr. Carswell's figures of similar diseased structures, and to a case by Cruveilhier, which that eminent pathologist had adduced to show that gradual compression on the brain might be borne, without the display of any very obvious symptoms.

The other specimens were from the lungs of the same individual ;

it had been remarked that one lung was dull on percussion, and that the dulness increased from above downwards, and to a greater degree than when the lungs are the seat of scrofulous tumours; there was a tracheal murmur but no amphoric resonance, and Dr. Greene doubted whether there had been pectoriloquy. There was caseous matter in the expectoration, and all the physical signs of a cavity in the lung; during the action of coughing there was gargouillement. When the thorax was opened it was found that the lung was also the seat of the cephalomatous disease; posteriorly a large mass of the malignant matter enveloped the pulmonary artery and a bronchial tube. The opposite lung was preternaturally clear on percussion. Dr. Greene concluded by observing, that this case was of value as an additional instance of ulceration of the lung not being diagnostic of scrofula. Two instances had been already communicated by Dr. Stokes and one by Dr. Law, of malignant diseases affecting the lung, and in all these the lung was ulcerated as it is in scrofulous diseases.—(*Museum, Richmond Hospital.*)

2. *Atrophy of the Heart in Phthisis.*—Doctor Stokes said the specimens which he wished to present to the Society at that meeting were possessed of considerable interest. They were from the body of a man who had died of phthisis at a very advanced age. The heart presented an appearance which he believed had been remarked previously by only King of London, and R. Adams and R. W. Smith of Dublin. In the present case there was atrophy to an extreme degree of the heart, a condition already remarked as occurring in chronic phthisis, the heart observing the law of the atrophy of voluntary muscles, but what he particularly desired to direct the attention of the Society to, was the atrophied state of the aortic valves in this specimen; they were very thin, and in some places cribriform. The filaments corresponding to the perforations were as delicate as a spider's thread. The tongue of this patient was very red, smooth, and dry, but there was no inflammation of the stomach. This appearance of the tongue, usually designated *the beefsteak tongue*, has been also observed in fevers where there was no coexistent gastric affection; it is therefore not to be viewed always as a proof of gastric disease. The cavern in the lung was very large, and contained but little fluid; as it became dry the metallic sounds became audible; in the early stage of the disease while there was fluid, there was gurgling, and the sounds could be modified by change of position. When the cavern had become dry, the expectoration ceased, but a little before death it was restored, and this was explained by finding in the opposite lung, two small recently formed cavities. One hydatid was found in the kidney. As during a part of the progress of this case, the cavity in the lungs gave the metallic sounds as observed in pneumothorax, the diagnosis from pneumothorax was based on the signs which indicated the costal and pulmonary pleura to be in opposition.

3. *Dissecting Aneurism of the Thoracic Aorta.*—Dr. Kirkpatrick produced the recent specimens in this case, the subject of which

was a man named Mullins, aged about 60, who had died during the previous week in the hospital of the North Union Workhouse. He had been operated on for strangulated hernia in April last. On last Saturday he was suddenly seized with pain in the back, and in the evening of the same day complained of pain in the chest, and great weakness. When Dr. K. saw him his extremities were cold, no pulse was perceptible, nor action of the heart; the countenance was anxious, and the man was delirious. Warmth was applied and other means used to restore him from the collapsed state in which he then was. These were in some measure effectual; he rallied a little; on the next morning the first sound of the heart could be distinguished; after this he sunk rapidly and died. When the thorax was opened it was observed that there had been an effusion of blood into the pericardium, the sac of which contained from eight to ten ounces of it. There was a rent in the aorta, and the vessel was dilated in that situation; the effused blood had separated the coats of the vessel from each other, dissecting it completely round. The aortic valves contained atheromatous deposits. Dr. K. thought that the rupture of the vessel had probably occurred towards morning, and that the absence of the second sound of the heart might be owing to the vessel being surrounded by this soft mass. As the subject of the present communication had been operated on for hernia, the parts concerned in that operation were carefully examined. The hernia was the direct inguinal species and was of long standing before it became strangulated. The operation was performed by Dr. Kirkpatrick. In dividing the stricture, the knife was directed upwards, and the examination of the parts after death showed, from the relation of the artery, that the incision, if carried outwards, would most probably have proved fatal.

4. *Fungus Hæmatodes of the Eyes and Liver*.—Mr. R. W. Smith exhibited an example of encephaloid disease, affecting the eyes and the liver. The specimens were taken from the body of a child æt. 18 months. No account of the origin or duration of the disease could be obtained, the infant having been deserted. Both eyes projected from the orbits; upon the right side the external tumour was as large as a small apple, and presented a foul, sloughing, and bleeding surface; the left was much smaller, and the surface of the tumour had not ulcerated; it was of a dark crimson colour, and conical in its form: the child did not appear to suffer any pain; was emaciated in the extreme, and its appetite continued voracious to within a short period of its death; there was a remarkable fulness in the right temporal fossa, a circumstance which Mr. Smith had remarked in other cases of malignant disease in the orbit, and which generally indicated the extension of the morbid growth by absorption of more or less of the outer wall of the orbit. The child sunk very gradually without any remarkable symptoms. *Autopsia*.—The right eye was completely disorganized, the sclerotic being the only structure of which any distinct trace remained, and which, as Makenzie has re-

marked, appears to suffer less than any other part of the eye, from this disease; the morbid growth extended backwards, leaving the orbit by the foramen lacerum orbitale; the optic nerve was surrounded by it, was softer than natural, and discoloured; upon the left side the disease appeared to have commenced in the vitreous humour; in the liver there were several encephaloid tumours; the other viscera were healthy. Mr. Smith remarked, that the occurrence of this disease in both eyes was not very frequent. A case is mentioned by Saunders, however, in which the disease formed in one eye, and six months after in the other; Makenzie mentions having seen it nearly equally advanced in both eyes of a child, and Stevenson, in his work upon Amaurosis, records a similar example: the disease is infinitely more frequent in children than in adults, and Mr. Smith was inclined to believe, that in the latter, the disease was more apt to commence in the orbit, while, among the former, some part of the globe of the eye seemed to be its primary seat.

Thirteenth Meeting, February 19, 1842.

Dr. MONTGOMERY in the Chair.

1. *Peritonitis.*—*Hypertrophy of the Mucous Intestinal Glands.*—*Sanguineous Effusion into the Jejunum.*—Doctor Lees laid before the Society portions of the intestinal tube of a child eight years of age, which about eight months ago had maculated fever, from which it recovered, and appeared to be completely restored to health. On the night before last, a sudden attack of vomiting came on, which at the time was not regarded as of any importance, as it had occasionally occurred before, without any ill consequence. In two or three hours after the vomiting there was pain in the belly, and at 9 A. M. on the next morning it died, just before the hospital was visited. On opening the body the intestines appeared livid externally; they were agglutinated together by lymph recently effused; the stomach was large and was filled with a sanguineous fluid; its mucous coat was injected. In the upper part of the duodenum the glands of Brunner were hypertrophied but not ulcerated, and the mucous membrane was very vascular, and had an almost granular appearance from the numerous hypertrophied glands with which it was studded; the jejunum was full of a dark-coloured fluid, apparently sanguineous, and its mucous membrane was of a deep crimson colour; the solitary glands were highly developed; the mucous coat of the ilium was very vascular. The mesentery appeared permeated by the same fluid which filled the jejunum; it resembled extravasated blood; the mesenteric glands were enlarged. The liver, spleen, and lungs appeared healthy. It was remarkable that there had been no discharge of blood per anum; the bowels during the child's illness, as well as previously, had been rather confined; the hypertrophy of the mucous glands, and especially of the Brunnerian was also a striking peculiarity. Dr. L. pointed

out the several morbid conditions in the specimens, and also produced a coloured drawing, made immediately after the opening of the body.

2. *Fibrous Tumour of the Uterus*.—Dr. Montgomery said that by the kindness of Dr. Stokes, he was enabled to present to the Society a good specimen of a disease of the uterus, which had been indeed mentioned on a former occasion, but of which no perfect specimen had been as yet produced. The affection to which he alluded was the *Fibrous Tumour* of the uterus. It is not vascular; it is the *Fleshy Tubercle* of Bayle, and has been described by Clarke, from some of whose opinions Dr. Montgomery dissented. His opinion was, that this tumour often degenerates into a disease which is mortal, if not cancerous, contrary to what Clarke had maintained. Dr. Montgomery referred to a former communication on this subject, made to the Pathological Society, on the 19th of January, 1839, and he now produced also a drawing of the preparation which he at that time exhibited. The present specimen was taken from the body of a woman aged 45, who died lately in the Meath Hospital, in whom there was cancer of the peritoneum; the fibrous tumour was attached to the uterus by peritoneum; in the parietes of the uterus itself there were two other tumours imbedded, one of which was highly vascular and softened in the centre. When such tumours soften at the centre, Dr. Montgomery remarked, that they give a sense of fluctuation, although they contain no fluid, and hence the failure of the attempts which have been made at paracentesis. This preparation also exhibits dropsy of both Fallopian tubes. The fluid contained many floating tumours, perhaps coagulable lymph; the fluid was not sanguineous. Such dropsy is a rare affection, because both extremities of the tube must be closed before its occurrence. Dr. Montgomery illustrated his observations on this state of the tubes, by exhibiting the plates given by Cruveilhier and Madam Boivin.

3. *Cancer of Peritoneum*.—Dr. W. Stokes presented the abdominal viscera of the same patient, from whom the uterus just exhibited by Dr. Montgomery had been taken. They exhibited an enormous quantity of malignant disease, the whole extent of the peritoneum being engaged; the malignant growth was in the form of tumours, occupying every part of the serous surface, but the parenchymatous organs were not affected, with the exception of a few spots on the liver. The omentum was thickened and shrivelled up; it had become a mass of the malignant disease. The spleen was covered by a false capsule of this cancerous matter. In the lungs were one or two cancerous tubercles. Dr. Stokes thought it worthy of consideration, whether in this case there might not originally have been peritoneal inflammation and lymph effused, which had afterwards become the receptacle of cancerous deposition.

4. *Aneurism of the Thoracic Aorta*.—Mr. O'Ferrall said, the explanation of the double soufflet heard behind the sternum was a subject of great interest, and attended with many difficulties. The case to which the specimens he then presented belonged, was capable of assisting in this object. The subject was a man aged 40, who was

admitted into St. Vincent's Hospital, labouring under dyspnoea and cerebral torpor; he could give but an imperfect account of himself, complained of confusion and pain of the head, his face was swollen, the conjunctiva suffused, and the neck tumid; the right side was swelled, and on the surface of the swelling were several tortuous veins. There was dulness under the right clavicle, and the respiration in the right lung was observed to be feebler than in the opposite. The sounds of the heart were normal, but behind the middle of the sternum a double soufflet was distinctly audible, extending upwards to the fourchette of the sternum and clavicle; the second soufflet was shorter than the first; the pulse in the radial artery was throbbing, and was synchronous with that in the femoral, but was not dicrotous. There was neither dysphagia nor stridor. Mr. O'Ferrall diagnosed thoracic aneurism, and as there appeared to be much cerebral congestion, he directed bleeding for its relief; the blood drawn was buffed; the patient was somewhat relieved. On the following day, as the symptoms were again urgent, he was cupped on the nape of the neck, but every effort to relieve proved ineffectual, and he soon after died delirious. When the body was examined the thoracic viscera were the first objects of attention; the aorta, immediately above its origin, and up to the commencement of its transverse portion, was dilated, and in the dilated part were one or two depressions like aneurisms, from deficiency of the middle coat; within the coats of the aorta there was deposition of calcareous, and of atheromatous matter; the aortic valves were perfect. A gland between the aorta and the right bronchus was converted into a calcareous mass; the lungs were emphysematous. The venous system of the head was peculiarly congested. What then was the cause of the soufflet? Dr. Stokes has conjectured that it may be caused by a largely dilated aorta; in the present case Mr. O'Ferrall did not think the depressions which he had shown in the specimen could have had much influence. Mr. O'Ferrall also produced a cast of a thoracic aneurism that he had communicated at a former meeting, but in which there was only a single soufflet.

5. *Ulceration of the Cartilages of the Knee Joint.*—Mr. Smily laid before the Society a limb which he had recently amputated for disease of the knee joint. The subject was a man 30 years of age. The leg had been permanently flexed on the femur, and there were many fistulous openings into the joint. [Mr. S. having made a vertical section, pointed out the several lesions which were observable.] The tibia was dislocated backwards and outwards on the femur. The articular cartilages and ligaments, and even the condyles, had been destroyed by ulceration. The parietes of the os femoris were thin and atrophied, and there was an abscess commencing in the cancellated structure.

6. *Hernia, Hydrocele, and Spermatocoele.*—Mr. R. W. Smith presented a specimen of a remarkable combination of morbid states. It consisted of a hernia, a hydrocele, and a spermatocoele; the hydro-

cele lay at the most inferior part, above it was placed the hernia; the enlarged and varicose vessels constituting the spermatocele occupied the posterior part of the hernia and hydrocele, but were largest in the interval between these tumours; the component parts of the cord were widely separated from one another; the vas deferens being placed nearly directly in front of the hernia, but behind the hydrocele; and had the hernia become strangulated, and an operation been rendered necessary, this tube would in all probability have been wounded.—(*Museum, Richmond Hospital.*)

7. *Solidified Lung*.—Mr. Power presented a specimen of pneumonia in a child. The left lung sunk in water; the upper was the only part capable of respiration, and that portion, when separated from the remainder, was buoyant. There was extensive pleuritis at the same side with the inflamed lung. The history of the case was so far remarkable, that no complaint was made by the child up to thirty-six hours before its death.

Fourteenth Meeting, February 26, 1842.

Mr. CARMICHAEL in the Chair.

1. *Variola after Vaccination*.—Dr. Corrigan said there had been lately under his care in the Hardwick Hospital several cases of small-pox in patients who had been vaccinated. The appearance of the eruption was most accurately delineated in the drawings which he produced to the Society. It would be observed, that the variolous eruption was modified, the pustules were irregular and diversified both in size and progress. When those which first appeared had reached their full size, he had observed others to spring up on other parts of the body. In these patients the marks of the vaccination remain still conspicuous. He had observed this peculiarity in the confluent small-pox occurring in vaccinated persons, that the disease continues in a severe form only until the pustules have attained their full size, and also that there is no secondary fever; foveolæ are of frequent occurrence after the eruption.

2. *Pemphigus*.—Dr. Corrigan said that a case of that very rare disease, pemphigus, having come under his notice in the Hospital, he had a drawing made, which he begged leave to exhibit to the Society. This eruption is accompanied by an extreme degree of depression, and fresh vesicles occur as the maculæ of former vesicles disappear. In this case they had appeared first about the hip; they had no hardened base, and they left behind them a clear red surface, which had a tendency to heal. They had appeared about the ninth day of the illness. He had at first from the symptoms been led to apprehend diffuse inflammation, but as yet the case had proceeded favourably. He was of opinion that there was no peculiar fever belonging to this complaint, and that the eruption does not occur at any determinate period.

3. *Coagulum in the Substance of the Brain*.—*Ramollissement*.—

Dr. Hutton said the specimens he then produced were from the body of a patient who had died during the week in the Richmond Hospital. He was a man aged 40, of intemperate habits, had been a soldier, and served in Canada; on his voyage homewards had an apoplectic attack, and was invalided in London. He had been received as a patient into the Richmond Hospital on the 17th, at which time his right side was paralysed; he was speechless, his pupils dilated, and his evacuations came away involuntarily. On the 21st the paralytic side was affected by convulsions, which recurred on that and the following day. After his death the parts within the skull were carefully examined, and the drawing made, which, with the affected parts themselves, he then laid before the Meeting. There was fluid blood in the ventricles; a considerable quantity had been effused, and formed a coagulum within the substance of the brain of about three inches by two. This was found by cutting down to the centrum ovale; in the centre of the coagulum was a mass of softened brain; the corpus striatum on the left side was occupied by coagulum, and was softened.

4. Mr. Adams would lay before the Society a case of “*Ramollissement*” of the brain, which had been attended by his friend Mr. Abraham Palmer and himself, and which case terminated fatally on the 6th February last. They made a careful post mortem examination, and were enabled to lay before the Society an excellent drawing of the recent appearances of the brain, and the morbid portion of the organ itself. The following is the history of this case:—

A. B., aged 50 years, was an active man, of a spare, though rather muscular frame; he appeared a man of very moderate intellectual powers, but who engaged his mind greatly in business and in speculation, perhaps somewhat beyond his mental powers, and was consequently often weary and exhausted by his over exertions; he was obliged to keep very extensive accounts with various landed proprietors, to whom he was agent; he also held a responsible government situation as a solicitor; he was very generally supposed a very temperate man, and had all the external appearances of such a character; but still he was very susceptible of being affected by a very small quantity of wine, the first effects of which were to render him irritable and captious; for latter years (without being himself at all aware of it) he daily drank habitually too much wine (chiefly sherry); he walked a good deal about his lands, and had his feet much in the wet, but never used any general, active, or riding exercise; he dined late, had a large appetite, and slept well; his sight was greatly impaired, and the lens was evidently opaque in the centre, and presented the appearance of the senile eye; in a word, senile cataract to a slight degree existed, and the lens appeared yellow. About four months ago he came to town, accompanied by his medical attendant, and Sir R. Franklin, Mr. Palmer, and Mr. Adams, with Sir P. Crampton, held a consultation on his case. A. B. had many symptoms which convinced us that organic disease existed in the brain; his memory of recent events was quite defective, and other defects of

mental power were observable; his pulse was seldom above 50, and, although not paralytic, there was an *inequality* of power in both hands observable; the left, for example, was weak, and he was unable to grasp any thing firmly in it; his apprehension was tardy, his words inappropriate, but there was nothing remarkable as to his articulation. The night he came to Dublin he dined out, and, although he was perfectly sober, he lost his way in the streets, and could not make out the hotel he had intended to sleep in; he soon applied for direction to a policeman, the latter, supposing him to be intoxicated, or that he wished to ridicule him, took him into custody, and brought him to the police station-house; he was then able to recollect the name of his medical friend who accompanied him to town, and the hotel he lodged in; this gentleman having been sent for, came to him, and conducted him to his hotel. This I mention as a proof of his loss of memory. Many proofs of his loss of memory of recent occurrences were mentioned: for example it was stated that he would ask the same person to take wine at dinner twice, or even thrice the same day, totally forgetting that he had only a few moments before done so already. A. B. seemed to get gradually weaker, his pulse became more languid, and slower; he was habitually more lethargic; he complained of pain and heat in his head, and of an occasional rush, as it were, of blood to it. The temporal arteries seemed to throb much, his vision became more indistinct than the extent of existing opacity of the crystalline could account for. There was occasionally a slight strabismus, and sometimes double vision, as far as we could collect from him; he scarcely could see any thing with the right eye, he gradually became more lethargic, and less irritable and complaining, could eat and drink enough for his present state, but after a little time his swallowing became difficult, and the catheter became necessary to relieve the bladder: he gradually sunk, and died on the 6th of February, 1843.

Medical Treatment.—The disease was considered as disorganization, or softening of the brain, and a mercurial course was prescribed, occasional leeching to the head, a regulated and moderate diet; wine was forbidden; counter-irritation actively used; small blisters behind the ear, then a very large blister over the head; tartar emetic ointment, lastly a caustic issue.

Post-mortem Examination.—The arachnoid membrane was opaque, between this and the pia-mater there was a sero-gelatinous effusion. The opacity of the arachnoid was best seen where this membrane covered veins. The left hemisphere of the brain was natural; some water found in the ventricles and the spinal canal. The anterior part of both hemispheres were sound, but in the posterior part of the right hemisphere just external to the optic thalamus, the brain was much diseased; it was softened, yellowish, and the yellow colour pervaded the greater part of the right hemisphere, from the centre of the centrum ovale backwards. There was no extravasation of blood, but the small capillary vessels of the brain seemed very numerous, and much

enlarged. The drawing Mr. A. held in his hand would give an excellent idea of the anatomical characters of this disease of the brain.

This case Mr. A. thought was a good example of that chronic disorganization of the brain, which Rostan has denominated "ramollissement." Long before the French pathologists had directed attention to this question, Dr. Cheyne, of this city, was familiar with the symptoms of the affection, and there can be little doubt but that under the head of what he denominates "Creeping Palsy," he has described, in the 4th Vol. of *Dublin Hospital Reports*, 1827, pretty accurately the phenomena which Rostan mentions as belonging to "ramollissement" of the brain. Dr. Cheyne's account is very brief. He says, "The reader is perhaps not well acquainted with the disease which in this country is called 'creeping palsy.' It is so called because it insidiously extends chiefly from one part of the body to another. I shall therefore shortly describe its progress. First there is perceived a numbness in the course of a nerve, often the sciatic or ulnar nerve. This may exist for some months without any other symptom of disease, and indeed I believe the disease often proceeds no further, but more usually, after some months, a slight defect, or drag, as it is called, is observable in one of the legs, which renders the patient liable to trip; next there is an inability to use one of the hands in such ways as require combinations of the muscles of a more complicated nature, for example, the patient cannot put his hand into his coat pocket. The pulse will be found *slow*, the circulation languid, the expression inanimate, together with *restlessness*. Some defect of mental power is observable, the apprehension is tardy, the speech less *articulate*, the words inappropriate, and the recollection of recent events indistinct. When the disease proceeds more rapidly, the sphincter begins to fail, slight convulsions occur, the individual becomes hemiplegic, a complete paraplegia takes place, with imbecility of mind. The convulsions become stronger and more frequent, and in one of these the scene closes.

In the dissection the medullary substance of both hemispheres of the cerebrum was melted down into a soft mass of the consistence of thick cream, *through which large vessels were found to ramify*, The cortical part surrounding this substance was firm, and seemed condensed, so that the softened medullary mass appeared to be confined in a kind of cyst; the inner surface of the cortical part felt like a soft pancreas. The corpus striatum of the right side (the *left* was the paralytic side) was internally converted into a substance similar to the medullary matter of the hemisphere; that of the left corpus striatum natural. He adds, in one family of three sons, the whole three were affected with creeping palsy.

5. *Stricture of the Trachea*.—Mr. O'Ferrall said the specimens he had to lay before the Society belonged to a very interesting case of disease of the trachea, which had come under his notice in St. Vincent's Hospital. The subject was a female, aged 26 or 27 years, who had been a patient in that establishment several months ago, while

she was suffering from phagedænic ulceration of the throat. She was successfully treated, and was discharged; but, in five or six months afterwards, returned to the Hospital affected with stridulous breathing, a teasing cough, loss of voice, and extreme difficulty of deglutition. When the finger was introduced into the fauces, the epiglottis felt ragged and shortened: the respiration was feeble all over the chest, but no part sounded dull, and there was no evidence of either solidification of the lung, or of the existence of any tumour within the thorax. This woman died suddenly. Fumigations had been used, and had given a little ease. Tracheotomy was proposed, but decided against; and the examination after death proved that this decision was correct. The epiglottis was found to have been partly destroyed; the right arytenoid cartilage also was in a state of ulceration, but both appeared to be healing: the trachea itself was contracted; its parietes pressed together; the lining membrane was a pale yellow colour; the cartilages were softened, and the distance between them lessened; posteriorly the situation of the membranous portion was occupied by a growth of a dense firm matter, which was connected with the cellular membrane behind, which was in a thickened state; below the cricoid cartilage the calibre of the trachea was strictured so that only a very small bougie could be passed through; at the strictured point there had been ulceration of the mucous membrane. The diagnosis in this case was peculiarly difficult; the stridor in breathing was insufficient to point out the exact nature of the disease; its situation could not be discovered by auscultation, for it was equally intense in every part of the course of the trachea. It is known that stridulous breathing may be produced by pressure on the trachea, below the larynx. This case presented a new cause of stridor. It was evident, by examination of the specimen, that tracheotomy would have been quite ineffectual, as the opening would have been made just above the strictured part of the canal.—(*Museum, St. Vincent's Hospital.*)

6. *Disease of the Hip-joint.*—Mr. Hamilton said he wished to lay before the Society a preparation illustrative of the pathology of morbus coxæ, on which he had to offer some remarks. The subject from which this preparation was made, was a girl eleven years of age; the disease of the hip had existed for a considerable time: the right thigh was bent at a right angle on the pelvis, and admitted of but a slight degree of lateral motion; its head was found to be united firmly to the surface of the acetabulum by organized lymph; there was a hole leading from the acetabulum into the pelvis, and several fistulous openings, communicating with the sacrum, which was also diseased: there was flexure of the spine. Mr. H. observed, that the shortening of the limb, in this disease, could be traced to several causes. In some cases, but these are rare, it depended on dislocation of the head of the bone; while in others, it was produced by an erosion of the head of the bone, and a deepening of the acetabulum. This condition was well exemplified in the case of a boy, of which he had made a drawing. Where the acetabulum had been completely denuded of its car-

tilage, and the bones composing it, separated into three portions, which were moveable on each other: in this case the cavity was greatly increased in depth. He had a preparation of another case, the subject of which was 26 years of age, and which exhibited another mode of the shortening of the limb. In it the superior portion of the brim of the acetabulum was softened, and yielded so much that the femur was drawn up. In one of the preparations the depth of the acetabulum was such, that nothing but a membrane remained interposed between the head of the femur, and the cavity of the pelvis.

Fifteenth Meeting, March 5, 1842.

Dr. GRAVES in the Chair.

1. *Aneurism of the Abdominal Aorta.*—Dr. Greene presented the recent specimen. The subject of the case was a woman who had been a fortnight under his care in the Whitworth Hospital. It appeared from the account which she gave, that the disease originated in a severe injury that she had suffered eleven years ago, after which she began to feel pain in the lumbar region, which continued, with some intervals of remission, gradually increasing in severity, and sometimes extending down the thighs; about three months ago she was thrown down a flight of stairs by a blow, and from that time the pain had become more violent, and was also felt about the crural arch and the course of the Fallopian tube, in which direction it was most acute. The upper half of the left thigh, from the crural arch to the middle of the limb, was benumbed, but there was no œdema; there was difficulty of passing water, and the water when passed was turbid, symptoms which led to the belief that the complaint was nephritic, and for which she had been treated ineffectually in several hospitals. When this patient was seen by Dr. G. her countenance was anxious, and the appearance generally indicative of suffering. The inferior third of the left side of the chest was larger than the corresponding portion of the opposite side, and sounded dull on percussion. The superficial veins were enlarged, and there was a pulsation or heaving visible in the lumbar region, extending from the margin of the seventh rib to the crest of the ileum on the left side. When the stethoscope was applied, the sounds and action of the heart presented nothing abnormal, but the impulse was extended to about two inches below the last rib; at the junction of the second rib with the sternum a continued soufflet was audible, and posteriorly, at the first and second lumbar vertebræ, a very rough soufflet could be heard. On last Sunday morning she had an attack of pain in the abdomen, so sudden and severe that it nearly induced fainting, and in the evening of that day she expired. Dr. G. remarked that this case confirmed the opinion of Louis as to the diagnosis of perforation of the intestines from aneurism of the abdominal aorta; the pain in this case having been ascertained not to be increased by pressure. When the body was opened the valves of the heart appeared healthy; the aorta within the

thorax was thickened, and about the arch there was atheromatous deposition between its coats; on laying open the abdomen it was discovered that there was an aneurism of the aorta about where the mesenteric artery originates. This had not been suspected during life until her last illness; the aneurismal sac was about seven inches long by four or five broad, and was almost completely filled with coagulum; its aperture was rough and irregular; to this was probably owing the character of the soufflet; there had been a considerable effusion of blood between the peritoneum and the parietes of the abdomen and thorax; this had compressed the lungs, and forced forward the kidney, spleen, pancreas, and some of the intestines; three or four of the lumbar vertebræ in contact with the aneurism were eroded, but the inter-vertebral substance had escaped; the erosion of the bodies of these vertebræ extended to where the nerves passed out from the spinal canal, and to this circumstance might be referred the numbness and want of motion of the lower extremity.

2. *Erosion of Branches of the Pulmonary Artery traversing Tubercular Cavities.*—Dr. Cathcart Lees said he had to lay before the Society some interesting specimens of disease taken from the bodies of two children, who had died during the week in the South Union Hospital. In both cases there was pulmonary phthisis; in both the immediate cause of death was violent hæmoptysis, and in each case the hæmorrhage came from a similar source. The first case was that of a child three years old, affected with phthisis; four days ago it was attacked suddenly by profuse hæmoptysis; this was checked at the time by treatment, but returned after an interval of two days, when the child expired during the attack. On examining the body, the left lung was observed to be filled with tubercles, and contained a large cavity in the supero-posterior portion of its inferior lobe; into this cavity a large branch of the pulmonary artery could be distinctly traced, from which the fatal hæmorrhage had proceeded. At the base of the lung was another tubercular cavity quite distinct from the former; across the former cavity there passed several bands which were ascertained not to be pervious; the stomach was distended with blood of a black colour and tarry consistence.

The second case was that of a child aged five years, also affected with phthisis, and who, like the other, had been attacked by sudden hæmoptysis, but one day earlier; from that time until its death it complained of constant pain in the side; the hæmoptysis was checked for two days, but returned then, as in the former case, to carry off the patient. After death, when the chest was opened, the left pleura was found full of a sanguineous fluid, in which there were several coagula; the lung was collapsed against the spine; in the inferior lobe supero-posteriorly there was a large ragged opening in the lung, communicating with the pleura; this opening was not lined by any membrane; there was round it a whitish line separating it distinctly from the surrounding part, which was flaccid, and of a livid green colour; a branch of the pulmonary artery could be traced opening

into the side of this cavity. The substance of the lung, as seen in the walls of the cavity, was sloughy and dark coloured, the whole exhibiting the appearance rather of a gangrenous abscess than of a tubercular cavity; both lungs were full of tubercles.

Dr. Lees observed, that the erosion of vessels in the lungs by ulceration was not frequent, but that besides these two cases in which it had occurred, he had been favoured by his friend, Mr. R. W. Smith, with another instance of it, in a specimen taken from the body of a lunatic, in whose lung there was found a tubercular cavity, into which a blood-vessel opened in the same manner. Mr. Smith had also met with two other cases during his anatomical investigations, and Dr. W. Stokes had met with a case in which he had been able to transmit air through an artery into a similar cavity. Such cases are, however, of rare occurrence.

Granular Kidney.—Diabetes.—Pneumonia.—Hydrothorax.—

Doctor William Stokes said the specimens which he had to present were taken from the body of a person who had for a long time laboured under albuminous diabetes; the case was one of great practical importance, and was highly interesting as an illustration of the progress of the symptoms, and mode of termination of structural disease in the kidney. The subject of the case was a gentleman who had for several years been in a hot climate, and while there had been mercurialized; after his return to Ireland he was a valetudinarian and was hypochondriac, addicted to taking medicine, and particularly aperients. Early in last Summer he had applied for advice to Dr. Graves; his symptoms at that time were constipated bowels, foul tongue, sallow, anxious countenance; the urine was pale, abundant, and albuminous. The treatment adopted gave at first great relief, and the albumen in the urine was greatly diminished; after this he went to London and consulted a medical practitioner in that city, who stated the complaint to be an affection of the liver, for which he ordered mercury as the most suitable remedy; this, however, did not salivate nor appear to act kindly as an alterative, notwithstanding which he was told that he was now well, and had been quite cured. Being soon again very ill, he was sent to a physician who paid great attention to nephritic diseases, and who treated him for a renal complaint. Having after some interval again got worse, he was advised to go to Germany, and while there was much relieved by air, exercise, and warm baths. Soon after his return to this country from the continent, he was seen by Dr. Stokes, who at first ordered only some mild aperient, and means adapted to promote the general state of health. In three or four months afterwards he again applied to Dr. Stokes, having got worse after an interval of amended health; he was now very weak, the bowels costive, and he was besides affected with an intermitting stiffness of both hands, very like the effect of strychnine in small doses. On inquiry he admitted that he had been under the care of a homœopathist, who, on a former occasion, had prescribed strychnine and sulphur. His feet were swelled up to the

anclcs; there was difficulty of breathing, and a slight bronchial affection; in the right lung superiorly a muco-crepitating rale could be perceived. He was now blistered on the side, and was treated with calomel and Dover's powder. The congestion of the lung was relieved, but it returned several times, and was met on each occasion by appropriate treatment; after this the abdomen began to swell, and the râle which disappeared in the right now went to the left lung, where it was accompanied by bronchial respiration, a circumstance of importance in the history of the case, as it has been denied that this exists in hydrothorax; but there was now effusion within the chest; the hydrothorax gradually increased, and the difficulty of articulating became greater from day to day; he gradually sunk. About five weeks before his death a slight degree of conjunctivitis set in, and it was remarkable that he could only see one half of any object within view. On the day after the inflammation of the conjunctiva set in there was superadded iritis, and then amaurosis. On examination of the body after death, the left lung was found compressed by the effusion; the heart was slightly adherent to the pericardium; the liver was in a perfectly normal state; there was fluid effused into the peritoneum; the kidneys were very small and hard; the capsule easily separable; and the surface granular; there was no appearance of renal phlebitis. Within the cranium there was great subarachnoid effusion; the arteries at the base of the brain were atheromatous; the left corpus striatum was somewhat softened, but the optic nerve was not apparently altered.

4. *Destructive Ulceration of the Wrist Joint.*—Dr. Hutton presented the recent specimen, and also a cast and a drawing illustrative of the case. The subject, who was aged 21, had been attacked two years ago by pain in the left wrist, for which the part was blistered at the time; afterwards the back of the hand was swelled and painful, and several abscesses with fistulous openings were formed. The fingers were long and attenuated, the rest of the limb œdematous. The patient began to suffer from hectic, and finally the limb was amputated. It would be observed that the fascia on the back of the hand was firmly attached to the thecæ of the extensor tendons; the extensor secundi internodii had been ulcerated, the synovial membranes were thickened, and in some parts destroyed by ulceration; the bones projected into the cavity of the joint, partly naked, partly covered with a pulpy matter; the cartilages were absorbed, and the metacarpal bones softened. The joint between the ulna and radius was not affected. The disease appeared to have had its principal seat in the cartilages and synovial membranes.—(*Museum, Richmond Hospital.*)

Sixteenth Meeting, 12th of March, 1842.

Dr. O'BEIRNE in the Chair.

1. *Apoplectic Cyst and Ramollissmeent in Right Ventricle of Brain.*—2. *Softening of Corpus striatum.*—Mr. Hamilton presented two specimens illustrating the pathology of diseases of the brain. The

first was from the body of a man named Finn, aged 70, who about a year ago fell down in an apoplectic fit, which was followed by paralysis of the left side, and of the sphincter; the paralysis was of both sensation and motion; the affected limbs were rigid, but in the leg the sensibility was less diminished than in the upper extremity. He recovered his intellect, and also regained the command of the sphincter: a week ago he died of pneumonia. On examining the brain no disease of the hemisphere could be found, but in the right ventricle there was a small nearly obliterated cyst, about the size of a lemon pippin, about which the brain was softened. The paralysis of sense and motion, and of the sphincter had evidently in this case been consequent on an effusion into the optic thalamus, of which this minute cyst was the remnant; the morbid lesion within the brain was limited to the posterior part of the thalamus. Mr. H. exhibited a drawing of this subject, showing the arm bent at the elbow, the hand at the wrist, and the little and ring finger flexed on the palm.

Mr. Hamilton's next specimens were from a woman aged 65, who had suddenly fallen down insensible, and on her return to consciousness was speechless and paralytic of the right side; in three hours afterwards she recovered the use of the right arm, and the power of speech; in six hours afterwards the voice was again lost, the paralysis extended itself to the sphincter, and the right arm became again affected; there was no rigidity of any of the muscles. After several alternations of getting better and again becoming worse, she died this morning: her intellect was throughout unimpaired. When the brain was examined, the only lesion that could be detected was in the substance of the left corpus striatum, a part of which was somewhat softened and changed in colour; its appearance was of a pale reddish brown. In Andral's cases of paralysis of speech a similar lesion had been described.

3. *Morbid Phenomena of Purpura.*—Mr. R. W. Smith said he had to lay before the Society some specimens exemplifying the condition of the intestines in purpura. They were from the bodies of two patients who had lately died of this disease. One of these was a female, aged 18 or 19, who had been epileptic and became a lunatic. The complaint began with hæmorrhage from the mouth, gums, and rectum, which occurred three or four times in the day. There was no bleeding from the nares, and no symptom of fever. She lingered in this way for twelve or thirteen days. There were a few spots on the legs, but none on the trunk. Both on the body and on the front of the legs there were large livid ecchymoses, some of which penetrated to the subcutaneous cellular structure. The lining membrane of the intestinal canal, from the rectum to the ilio-cæcal valve was dark coloured or black; in some places the mucous membrane had been destroyed. The folds of the intestine were ash-coloured, marked with yellowish zigzag lines. The small intestines were very vascular; the stomach also was vascular, and presented several petechial spots. On the surface of the heart were

several petechiæ beneath the serous coat; the surface of one of the kidneys was ecchymosed. The lung, on being cut into, was found to contain numerous tubercles, which were in greatest abundance towards the apex. Mr. S. having pointed out the several morbid phenomena in the recent specimens, and laid before the Meeting a drawing illustrative of the case, observed that the worst cases of purpura were those in which there was a tendency to the formation of ecchymoses. In this case they were caused by the slightest pressure on any part of the surface. He had known instances where they ensued on the very slight compression used in feeling the pulse of infants affected with this disease. He had a drawing of a gangrenous slough in the groin of an adult patient originating in one of these. In the subject from which the specimens were taken, some of the purpuric spots were elevated above the level of the skin. There was no extravasation in the head. The quantity of blood discharged from the rectum during the illness was surprisingly great.

The subject from whom his other specimens were taken, was aged 13, and in this instance the disease commenced with epistaxis; to this succeeded hæmorrhage from the stomach, and finally discharges of blood from the anus. There were petechiæ on the surface of the body, and on the conjunctiva. When the body was examined after death, there was found in the occipital fossa, a quantity of extravasated blood, which was fluid and very bright; there were petechiæ under the scalp, and sanguineous infiltration in the diploe of the bones of the cranium.—(*Museum, Richmond Hospital.*)

4. *Purpura subsequent to Eczema Mercuriale.*—Mr. Adams said that with the permission of the Society he would communicate a case of purpura which had occurred in the Jervis-street Hospital, where the notes of it had been taken by the late Dr. Coulter. The appearances, at different periods of the progress of the case, were accurately delineated, in the four drawings on the table. The subject of the case had been affected with syphilis six weeks before his admission into the Hospital, and had used mercury pretty freely: he became affected with eczema mercuriale. After the tenth rubbing in of the mercurial ointment, small very minute vesicles appeared. Some of these dried up; others discharged a fluid which excoriated the parts about the scrotum, a circumstance formerly observed by Pearson, and described in his work: dyspnœa and cough supervened. On the seventh or eighth day after his admission into Hospital, the dyspnœa became more oppressive; there were rigors, and afterwards bleeding from the gums, and from the fissures about the scrotum: during several subsequent days, ecchymoses appeared on different parts of the body, and in all these there was a great disposition to slough: there were ecchymosed spots on the lips, which rapidly sloughed: about the sacrum, in the same manner, sloughs formed, and from the sloughs there were bleedings: he died on the 16th day. The body was carefully examined after death: there were no hæmorrhagic petechiæ within the cranium, nor on the surface of the heart: the lungs, anteriorly, were

very anæmic and white—posteriorly they were congested: the mucous coat of the stomach and intestinal canal was ecchymosed.

Mr. Adams considered that purpura was rather a symptom of peculiar debility than a disease in itself. In proof of this, he mentioned a case of pemphigus gangrænosus, in which purpuric spots appeared on the skin, and in a case of cancrum oris they had been observed towards the close of the disease. It was well known that they appeared in scarlatina maligna, in plague, and in some other diseases. Indeed, purpura corresponded very much to the descriptions which authors give of the land scurvy.

5. *Meningitis immediately subsequent to the Disappearance of Erysipelas of the Head.*—Mr. R. W. Smith produced a preparation of one of the hemispheres of the brain of a woman, aged 30, who was attacked with erysipelas of the face and head. There was a considerable degree of fever, but it was of a low kind, and the prostration of strength was extreme: diffusible stimuli were used, and her condition improved: for seven days she amended: the erysipelas was fading: on the morning of the 7th she had rigors, and afterwards the erysipelas completely disappeared: on the 8th she was restless, tossed herself about, and complained of pain in the head: there was no paralysis, no intolerance of light: on the 9th her breathing was stertorous, and she became comatose: during two days following, she had convulsions: the hands were firmly clenched, and she was constantly moaning: she died in a state of coma on the 11th, four days after the disappearance of the erysipelas. When the skull was opened after death, it was found that the meninges were the seat of inflammation: the right hemisphere was covered with a greenish matter, an appearance very well represented in the drawing made at the time. Mr. S. observed that some authors denied the metastasis of erysipelas. He had observed pneumonia succeeding to the sudden disappearance of erysipelas on the chest.—(*Museum, Richmond Hospital.*)

On the Treatment of Cicatrices after Burns, by Mr. James, of Exeter.—He has noted fourteen cases of severe contractions after burns: eight in his own practice, out of which he perfectly succeeded; and six in the practice of his colleagues, where success also he believes followed in nearly the whole. The following extract will explain the method he adopted:—

“I shall now, with a few additions, very briefly recapitulate the principal points which, in my former paper, I offered to the attention of the society I then addressed, which are especially these:—

“That, whereas in the limbs no difficulty exists in maintaining the proper position of the parts after the cicatrix has been set free, there being but one joint concerned, and that easily fixed, this is far from being the case in the neck, from the peculiar mobility of that part, arising chiefly from the numerous joints in the cervical spine.

It might be supposed, *a priori*, and indeed, has been, that confining the head back would keep the chin and sternum sufficiently asunder; but this is not so. To elude the effect of the cicatrix as it contracts, the cervical spine becomes shortened with a curve either to one side or backwards, as the case may be. To render this approximation impossible became, therefore, the object of my inquiry. I considered that if an apparatus could be interposed between the clavicles and the lower jaw, extending backwards to the basis cranii, so as to prevent these parts from approaching each other, I should obviate the difficulty. These purposes are fully attained by the apparatus here presented, which possesses the further advantage of raising the chin by the action of the screw, so that the change in the position, not only of the soft parts, but of the bones, is gradually redressed, and the neck and face wholly, or in a great degree, restored to their former proportions; for it must be observed that the bones themselves, as in talipes or varus, become altered in their shape. The rigid cicatrix holds the chest and front of the face tightly together, so that, as the child grows (for it is generally in children these accidents occur, especially females), the whole bony apparatus is fixed; and when it has been chiefly on one side, I have even seen the orbit of that side considerably lower than the other. I have also seen the lower incisors pushed horizontally by the pressure of the tongue, the counter-pressure of the muscles of the lower lip being wholly wanting.

“I do not pretend that all traces of so great a deformity can be effaced by the operation—that there will be no drawing down of the lower lip, no scar, no detriment to the personal appearance, but I am warranted in asserting that the lips will be allowed to close, to retain the saliva, and for distinct articulation—that the head and face may be carried erect, and freely moved, the lower lids no longer everted—that the patient will enjoy her life in comfort, and no more exhibit a picture miserable to behold. It has been objected that the contraction may return. The answer is, that it does not, if the apparatus is worn for a few months after the healing is completed. The observation of many years warrants me in stating this.

“I may further and incidentally mention, that the apparatus I have described not only answers the purpose for which it was originally intended, but that, if employed in due time, it is capable of preventing the primary cicatrices consequent on burns from contracting, as is fully shown by a patient now under the care of my friend and colleague, Mr. Harris, just about to be discharged from this hospital;* and furthermore, that it may be most advantageously employed in those cases where the cervical vertebrae give way from

* Eliza James, aged eleven, Exeter Ward. Burn occurred in April, 1842. It was treated without the collar for five months. It then began to contract, and the collar was applied, and continued to the present time. The head is quite upright; the distance from the lower jaw to the clavicle is fully three inches and a half. The mouth not deformed.—June 27, 1843.

disease, or where it exists in the *processus dentatus*, and support is required.

“Such are the uses of the instrument, and such are the advantages of the operation; but it must not be concealed that it is long, sometimes difficult, and very painful—that very great attention is requisite in the subsequent management, and a long confinement necessary on the part of the patient; yet, so strong is the feeling in the female mind of the horrid disfigurement, as well as physical disability, produced by these accidents, that I have never met with one patient who has not been deeply grateful for the relief afforded.

“It is but right I should state that another mode of operating has been very recently proposed and practised by an American surgeon, Mr. Mutter, of Philadelphia. It consists in adopting the Taliacotian principle, so as to cover the wound formed in the neck after the removal of the cicatrix. It strikes me, however, that if this should be found preferable in some, in many *bad* cases it will not answer the purpose, unless the collar be also employed; for although, by a careful dissection of the parts, at the time of the operation, the chin and the sternum may be very considerably separated, yet, without the continued and gradual action of the screw, they will not be restored to their natural position. In addition, I may mention, that in by far the greater number of bad cases, the adjacent integuments are themselves so involved in the mischief as to offer no suitable materials for a flap. I may observe, in this place, that in small cicatrices in any part of the body, I have sometimes adopted the plan of destroying them by caustic potass. The ulcer which forms offers no obstacle to any extension which may be wished, and the cicatrix which follows has no peculiarity like that consequent on burns by fire, a circumstance sufficiently remarkable in itself.

“As the mode of treatment has already been stated in the former paper I have alluded to, I shall not occupy your time by particular details, but merely state that it consists—

“1. In dissecting the hardened cicatrix from the subjacent parts, having previously dissected it with Brodie’s knife in most cases, and, in all, forming a flap to turn up under the chin; and I may here take occasion to mention that I think it the safest and best method to operate on the patient in a recumbent posture.

“2. In confining this flap under the chin by broad straps of adhesive plaster, and a uniting bandage, secured at the top of the head, which must be shaved to some extent.

“3. In covering the large exposed surface on the throat with moistened lint, and bread and water poultices, confined by a paste-board collar, until suppuration is freely established, the head being rather thrown back at the same time.

“4. By the use of the screw collar as soon as suppuration is established. In very bad burns it is often desirable to change the first for one with a longer screw, as ground is gained for its action. The apparatus should be worn for many months at least after the cure is completed.

"I will not weary your patience by the details of any cases in addition to the three formerly published, to which I beg to refer, but shall merely give a reference to the fourteen I have alluded to, and the names of the surgeons by whom they were performed. Permit me to add, that the fact of the operation being practised by my colleagues to the present time, is, perhaps, the best evidence that can be produced that it answers the purpose for which it was intended.

"I may remark, in conclusion, that in Dr. Mutter's case it was found necessary to divide the sterno-cleido-mastoidæi; but the subject was an adult, aged twenty-eight, in whom the accident had occurred at five years' old, and consequently the muscles were very much shortened. In the cases on which I have operated, with the exception of one, no such interval had elapsed, but even in this I found the screw collar suffice. It was in one of the cases not entered.—*Provincial Journal*.

Spiders discharged from the Eye—Hysteric Monomania, by A. Lopez, M. D., Mobile, Ala.*—I was requested, on the 5th of February, 1840, to visit a young lady, from whose mother I received the following statement:—The patient had left the city of Charleston, S. C. (at which place I then was), to visit a friend who resided in the country. On the night of the 29th of January, while conversing in bed, she was sensible that some object had fallen from the ceiling of the apartment, upon her cheek, just below the inferior lid. This caused her to apply the hand briskly and forcibly in order to brush off what she supposed to be some one of the many insects so common in country houses, upon which the friend with whom she slept observed, that, as the room was much infested with spiders, it was probable that the object which had fallen was one of them. In the course of the night she was awakened by a feeling of intense pain in her left eye, which continued at intervals until morning, when upon examination, the eye was discovered to be highly inflamed and lachrymose. Ordinary domestic means were applied, and during the morning, feeling an intense degree of itching and irritation, she rubbed the lids together upon the ball, and removed two fragments, which were readily recognised as the dismembered parts of a spider. Her alarm in consequence became very great, and was much heightened when the same thing was repeated in the afternoon. She left for home, and arrived in Charleston on the 2nd of February. During the voyage her mind was much perturbed and under considerable excitement from the event; and when I paid my first visit on the 5th, the date mentioned in the early part of my statement, the following was her condition: the right eye unaffected; the left turgid, inflamed, and weeping; and there had been removed from it that morning a spider, imbedded in a mucous covering. It was entire, with the exception

* From the American Journal of the Medical Sciences, July, 1843.

of two legs. The two preceding days before I had seen her, three others had been removed; and were now exhibited to me. I immediately submitted the eye to as close an examination as the irritable condition of the parts permitted, without being enabled to discover the minutest portion of any foreign substance. In order, however, to combat the pain and inflammation, I ordered leeches, saline-antimonial medicines, and evaporating lotions. I thenceforward visited her daily until the 19th, and at every visit I removed either an entire or dismembered spider from the same eye. Before proceeding it will be well to mention, that during the interval between the 5th and 19th, I invited, to an examination of the case, Professors Geddings and Dickson, and Doctors Bellinger and Wurdeman. Dr. Dickson, on one or two occasions, also removed these objects from the patient's eye. I made, assisted by Professor Geddings, the most minute scrutiny with a view of discovering—first, whether there could possibly exist a nidus within the orbit for these animals; secondly, whether a sac containing their ova was there concealed; and thirdly, if any communication between the eye and the nose could account for their appearance. For these purposes, the superior and inferior palpebræ were everted with great care, traversed thoroughly with a blunt probe, and afterwards I threw injections around the internal lining, but all to no avail. The anterior and posterior nares were closely examined by strong light, both of the sun and candle, yet we could not perceive the slightest trace of any means by which either ova, insect, or nidus could be retained.

The sensations always precursory to their removal were: a sense of burning in the ball, a pricking of the superior lid, proceeding more or less severely around the orbit, until it assumed a fixed pain within the lower lid, upon the eversion of which, by myself, if present, or her mother, in my absence, the spider, always dead, would be discovered enshrouded in its mucous bed, and removed by means of the finger or probe. I now resume the order of their discharge. From the 19th they were removed from both eyes, and so continued until the 23rd, when again they became confined to the left, and afterwards from each eye alternately until the 5th of March, when a truce was had until the 10th. During this interval, the eyes resumed their normal condition, but again on the 10th the inflammation was renewed and the discharge of spiders recommenced, the right eye being now chiefly the depository. Up to the date, during which time my visits were unremittingly made, none other than general observations were kept, but, the spider-making power appearing so inexhaustible, a more circumstantial diary was thought necessary.

March 10th. Two spiders.

11th. Two. Pain over right orbital region, passing gradually over the frontal sinus to the left. Sharp pricking pains upon pressure.

12th. Previous to my visit, one from the left eye, which was much less inflamed than the right.

13th. Eyes much improved in appearance. One discharged since my last visit, and another just previous to my departure this morning. As this discharge served greatly to perplex the views at which I shall arrive before I conclude this paper, it may not be irrelevant to notice it. I have mentioned the scrupulousness with which the eye and its appendages were examined, in order to elicit, if possible, any clue by which to unravel this enigma, and the fruitlessness of those exertions. It appears, then, that on the day of this visit (the 13th) a spider was removed before my arrival. A servant was despatched for it to a neighbour's, whither it had been sent for examination. Some time elapsed before her return, during which time I sat in such a relative position to the patient as to preclude all possibility of deception, and I had this day, as was my wont at every visit, made a careful examination of the eye, without discovering a vestige of any kind of substance. Upon the return of the servant, I arose to depart, at which moment the patient complained of pain, and, in a few seconds, by turning down the lid, I removed another spider.

15th. Eyes extremely healthy and clear. On the 13th, just after my visit, the mother removed three spiders, two entire and one broken; also a putrid substance, the precise nature of which I could not define. No others discharged to date.

17th. None since the 15th. Right eye more affected; upper lid much irritated and swollen. Left eye healthy.

18th. Right eye still inflamed; discharged a portion of web from the inner canthus.

19th. Eyes the same; another piece of web.

20th. Eyes perfectly natural. After my departure on the 19th, there was removed a sacculus containing ova.

27th. None since the 20th until to-day. The left eye being inflamed and painful, she was advised by a friend to insert an eye-stone, which, at its exit, protruded one spider of the long-legged kind, entire.

April 6th. None since the 27th ultimo. Eyes healthy and generally improved in their appearance.

13th. None since the 6th. Eyes healthy; has used them since my last visit in sewing and reading without inconvenience.

May 14th. None since the 13th of April. Eyes healthy, until a few days past; to-day they are weak, lachrymose, and slightly injected. They, however, improved under remedial measures, and the case terminated.

The total number of spiders removed from the commencement were between forty and fifty. During the progress of this very singular case, the treatment was regulated according to the greater or less degree of local or general disturbance. The patient was restored to good health, and continued so uninterruptedly to the date of my leaving Carolina, in November, 1840.

I have presented the facts as succinctly as possible, and here, perhaps, in the opinion of many, it should rest; but other considerations may offer themselves to warrant a further notice. They are

these: 1st, a case so anomalous and of so unusual occurrence, could not well exist, without necessarily exciting an intense degree of public curiosity, and, in fact, becoming, as it did, a subject of general notoriety and discussion in the various public presses of the union, all of which, however, were strictly unprofessional, as this is the first entire and correct statement yet made on the subject by myself. 2ndly, the character and respectability of the patient as well as her mother, being familiarly known to me for many years, preclude the remotest suspicion of any desire to impose, or to acquire a spurious notoriety on the part of the daughter, or of the countenance of fraud by the mother. 3rdly, the pathological history of the patient, which I will proceed to give, and which has induced me to distinguish this case as one unequivocally of *Hysteric Monomania*.

In adopting this rationale I am of opinion that I conform more strictly to the category within whose scope are embraced so many equally singular and otherwise inexplicable perversions of the nervous system, and under the influence of which the most remarkable anomalies have been produced. I, moreover, am disposed to regard it rather as a melancholy though interesting feature of disease, than a subject of levity to be classed among the nine-day wonders of every day report. The patient from her childhood exhibited a due inheritance of that temperament, which became more strongly developed at that age, which, in females, so strikingly calls into action the consentaneous play of every nervous affinity. The establishment of the catamenial period corresponded with this complication. Her natural disposition was variable, at times cheerful, sometimes gloomy, but more commonly timid and reserved.

In 1839, I attended her for an attack of chorea, during which many peculiarities were observable, and a few months preceding the invasion of the case, now under consideration, she was under my care for a neuralgic affection, terminating in a tremulousness of her upper extremities, corresponding with what Good in his *Neurotica* recognizes as "*synclonus tremor*," except that here the morbid action is exhibited on attempt at voluntary motion, whereas in this case it was independent of such causes. In the presence of these facts, to wit, the entire confidence entertained not only by myself but all others, in the strict veracity and irreproachable integrity of the parties; the predisposing and salient qualities in the idiosyncrasy of the patient, and the indisputable, though too frequent unexplained effects resulting from a morbid condition of the nervous system,—effects impressing their astounding influences not only upon the physical but also upon the psychological nature of a man,—can we, without becoming amenable to the charge of an indifference incompatible with the proper spirit of inquiry, which is so peculiarly the province of medical philosophy, refrain from devoting a little time to the investigation of this case.

Previously to any considerations touching the mental agency involved in this history, I will refer in abstract to a few instances, which, if not even in strict analogy, are nevertheless not devoid of interest, either as objects of science or curiosity.

1. In the "*Mémoires de la Société Médicale*," (Année 5me, p. 181), M. Silvy relates a case in which an immense number of pins and needles were swallowed, and their exit from parts remarkably singular. These were doubtless swallowed under an erratic condition of the mind.

In the *Med.-Chir. Rev.* vol. ii. No. 22, Oct. 1825, p. 559, will be found the extraordinary "*Copenhagen Needle Case*," in which it is stated that a young woman from Aug. 1807 to Dec. 1823, discharged from nearly every part of her body 400 needles. This case is reported conjointly by Professor Heckoldt and Dr. Otto. In 1825, she was living and in good health in Frederick's Hospital, at Copenhagen. No account is given by which we are to infer that so immense an amount of needles were accidentally introduced, and the presumption is legitimate that they were either swallowed or thrust in under a state of mind beyond the patient's controul. These are instances which would seem to owe their existence to influences such as constitute the pathological features of the case under review. They are only a few from the many with which medical history abounds. Nor are these records silent with regard to insects and larvæ being discharged from the human body, and from places so unusual as to excite surprise; and while I refer to a few of the most prominent, I do not conceive their characters parallel with my case, because in the former there are palpable grounds for explanation, whereas, in the latter, there is one of two modes alone, by which to obtain a solution,—either gross fraud and premeditated concert, or a morbid condition dependent upon extreme exaltation of the nervous system. I will, nevertheless, briefly condense a few of the cases referred to.

In 1828, M. Cloquet reported to the Philomathic Society of Paris, the case of a rag-gatherer, who in a state of intoxication laid himself down to sleep near some dead horses. He slept for twenty-four hours. On awakening he felt as if he were swelled out with much unusual pain. On his return home, a number of blisters arose about his head, and worms crawled out of his nose and ears, and other natural openings of his body. He went to the Hospital St. Louis. More came from his head when the swellings were lanced. His skin produced them every instant. The nurse collected three plates full. The conjecture was, that the flies from the dead horses laid their eggs in the pores of the man's skin during sleep, as well as in the natural openings of his body, and that warmth hatched the eggs, which produced the worms."—*American Journal of Medical Science*, No. 3, May 1828, p. 228.

Animals are frequently found in situations of the human body, for whose location it would be difficult to account. The doctrines of the equivocal and spontaneous generation have been taxed through all the bearings, and still leave us as much benighted as ever. I will merely refer to the several authorities, and give their cases in brief. Worms in active motion under the conjunctiva. Blot, of Martinique, removed by incision two from a similar position in the eye of a negress. They were thread-shaped, 38 milimetres long, with a black protuberance adapted for suction. The worm lay on the outside of the eye, and

sometimes turned around a portion of the cornea, causing stinging pains and nervous symptoms from fear. The patient, an African, was unable to give any account of herself, or the liability of her country people to this disease.

Bajou, of Cayenne, in 1768, observed a worm in serpentine motion in the eye of an negress; upon incision being made it removed, but was secured by forceps and dislodged. He saw another case in 1771. (*Am. Jour. Med. Sci.*, May, 1840, p. 194). The *LOND. MED. GAZ.* Aug. 1833, records a case of a little girl, ætat. 6, under whose conjunctiva, and resting upon the sclerotica, there was found a *cysticercus cellulosa* perfect in all its parts.

Some years since the Baltimore Sun related the case of an insect resembling a snake in the eye of a horse. It grew in two months from a half inch to three and a half or four inches in length. It moved with great rapidity, and incessantly.

Dr. Yule, in the *Edinburgh Philosophical Journal*, July 1825, p. 72, records cases of insects in the human stomach:—One, of a countryman, from whose stomach, after several weeks of intense suffering, there was ejected a large hairy caterpillar, supposed to be of the common dragon fly. The opinion is, that it must have lived several weeks in the stomach, and grown to its full size.

Dr. Reeve mentions the fact of larvæ inhabiting the human stomach. He cites a case, where the larvæ of the *musca domestica*, or common house-fly, were voided by a girl.—*New England Med. and Surg. Journal*, Jan. 1821.

Kirby and Spence relate a case where several beetles were vomited by a boy.

In the *Amer. Journ. Med. Sci.*, No. xlii. Feb. 1838, p. 473, will be found a case of a beetle discharged from the urinary bladder.

It now remains to attempt some explanation as to the means by which the spiders obtained their "local habitation" in the eyes of my patient. As might be supposed, conjectures were not idle, and the reasons assigned assumed their complexion in proportion as the credulity or scepticism of individuals prevailed. Those who yielded to the first, of course resorted to the intervention of miraculous agency, while the latter class believed it to be an artful endeavour to impose upon the community. I need not reiterate how unjust and unphilosophical such suspicions must appear under the historical features of this case. The only attempt to explain it by a natural and direct probable cause, was published by a Mr. Meddler, of Erie, Pennsylvania. In a letter addressed to the postmaster of Charleston, he gives the natural history and habits of the wood spider, which, he says, unlike the rest of that class of insects, who propagate their young from eggs, "bring them forth in perfect form," and the female carries them about, attached to the extremity of the tail. Mr. Meddler thinks, therefore, that it was one of this class which fell upon the young lady's cheek, and that the effort to brush it off separated the young from the point of attachment, upon which they took different directions, some into the eyes and others into the nostrils, whence they "could easily pass" to the eyes, and become killed there by the touch. He

also thinks that the spiders discharged from the eyes "were at different stages of maturity, and not of different species."

No, Mr. Meddler errs in every particular. The wood spiders "bring forth their young in perfect form." We have shown that one of the articles removed on the 20th March, was a sacculus containing ova. Again, his idea of their passage into the eye at the moment of accident is disproved, because I have stated the extreme care with which I repeatedly examined that organ and all its appendages; and surely if the extraordinary number discharged from first to last had been lodged therein, they could not have escaped observation. They were not in the nostril, for I have also said that due exploration was there made: moreover, the communication between the nose and eyes, even in a healthy condition, could not possibly have admitted the passage of bodies as large as many of these spiders were, much less under the high state of inflammation and swelling in which they were almost constantly found. Lastly, Mr. Meddler, deriving his history of the case solely from newspaper reports, originating with persons unacquainted with its character and progress, errs in thinking that the spiders were only "at different stages of maturity," and not of different species. The spiders removed from the eye were subjected to close microscopic examination by myself, assisted by several professional gentlemen accustomed to scientific investigations, among whom was the Rev. Dr. Bachman, whose reputation precludes all doubt, and we discovered at least three different species, distinguished by the anatomical classification of Latreille, Walkenar, and Hentz. But even supposing them to have been lodged "in perfect form," the fact that they were subjected to a residence in depraved secretions unfit to preserve the lives of insects, forbids the belief that they could have reached the different stages of size and maturity which they presented; much less so, then, could we suppose them to have been hatched by incubation either in the eyes or nostrils. I am, then, constrained to discard from my mind the presumption that they were lodged and perfected previous to their discharge, or that they were placed there by the patient in a healthy condition of feeling and with a desire to impose.

The only suggestion left for my adoption is this,—that from all the preceding history of my patient, there existed a want of nervous integrity, so operating upon the mind as to produce the form of disease which I have distinguished in my text as hysteric monomania; and I am induced to think that the various types of mental irregularities, which an unbalanced nervous system is so familiarly known to produce, sustain the belief. It is needless on this occasion to investigate the diversified operations of the human mind in its physical and pathologic relations, or to refer to the multiform phases it is capable of assuming under the excitement to which it is subjected by the agents which are perpetually at work upon its impressionable nature; suffice it to say, that the history of the different forms of insanity, from the highest degree of concentrated fury to the most subtle shade of the mind's day-dream, present arguments

and examples sufficiently numerous to render my view of this case at least plausible.

At the incipency of the case, I do not for an instant doubt the presence of those fragments of spiders, and perhaps one or two entire; but my opinion is, that subsequently, terror, superinduced upon the idiosyncrasy described, dethroned the judgment; hallucination usurped its seat; a morbid concatenation was excited, and the patient, under the control of this influence, was urged irresistibly to introduce them from day to day, until the morbid series was exhausted. I cannot express myself more forcibly than by adopting the language of M. Ollivier, addressed to the court at Paris, in behalf of a young girl arraigned for the murder of an infant. She confessed to have given it ten pins to swallow from time to time. M. Ollivier said, "he was inclined to attribute the present act to one of those unaccountable perverse impulses which are not unfrequent in certain females, more especially about their menstrual periods." (*Lancette Française*, 1839.) M. Dupuytren says, "I have seen at the Hôtel Dieu a great number of women and children, who had been affected with the strange mania of swallowing pins and needles." He then gives the case in detail, and concludes by saying, "on examining the body after death, several hundred pins and needles were found scattered through the viscera, muscles, cellular substance, &c."

I will, lastly, merely refer to that extraordinary form of insanity described in the *Journal de Progrès*, for 1828, under the title of Periodical Vino-Mania. It is reported by M. Pierquin who says, "The disorder commenced fifteen years ago in the shape of an irresistible impulse to swallow wine day and night without the possibility of satiety. The paroxysm lasts from two to three months, with an interval of equal duration, when it returns again without any prodrome that might indicate its approach."

I here close this case, extraordinary in its character under any aspect, and if my view of it be a correct one, it will afford another to the many which are to be found in nearly every work professing to analyze the yet inscrutable character of the human mind.

Mobile, Ala., April 26, 1843.

N. B.—The spiders are in my possession, and were exhibited with a statement to the Medical Society of this city.—*Medical Gazette*.

On the Detection of Arsenic in Medico-Legal Researches by Reinsch's Test, by Robert Christison, M.D., Professor of Materia Medica in the University of Edinburgh.—It is now generally known in this country, that towards the close of last year, Professor Reinsch proposed an entirely new method of detecting arsenic; which consists in acidulating any suspected fluid with hydrochloric acid, heating in it a thin plate of bright copper, upon which the arsenic is deposited in the form of a thin metallic crust, and then separating the arsenic from the copper in the state of oxide, by subjecting the copper to a low red heat in a glass tube. Organic fluids and solids, suspected to

contain arsenic, may be prepared for this process by boiling them for half-an-hour with a little hydrochloric acid,—solid matters being cut into small shreds, water being added in sufficient quantity to let the ebullition go on quietly, and care being taken to continue the boiling until the solids are either dissolved, as generally happens, or are reduced to a state of minute division.

Nothing can be more simple, easy, or precise, than the method of Reinsch. It is also exceedingly delicate, more so than is ever likely to be necessary in any medico-legal investigation; for it is adequate to detect a 250,000th part of arsenic in a fluid. It is also perfect in another respect: it does not leave any arsenic in the subject of analysis; none, at least, which can be detected by any other means, even by the most delicate process yet proposed, that of Mr. Marsh.

My object in briefly calling the attention of professional persons to the subject at present, is to mention the results of its application to two medico-legal cases in which I have lately employed it, and to state one or two circumstances which ought to be kept in view, in order to give its full value, as the means of furnishing irrefragable evidence in criminal inquiries.

Reinsch's test, as it is often called, is not to be regarded as in strict language a test, adequate to prove the existence of arsenic. Chemistry requires no new test for determining the nature of arsenic, once it has been detached by itself for examination. It is true, that the separation of arsenic upon copper, from a state of solution, by means of hydrochloric acid and heat, is a new fact in chemistry. And the experiment furnishes a test so far, that if the copper be not tarnished, arsenic cannot be present. But though Reinsch's discovery thus supplies a prompt and certain negative test, it cannot be regarded as a positive one, when the copper does acquire a metallic coating; because, as he himself has pointed out, bismuth, tin, zinc, and above all antimony, will in the same circumstances yield a coating to copper, different indeed in some degree from that formed by arsenic, yet sufficiently similar to render it absolutely necessary that the deposit be examined otherwise than by ocular inspection only. Reinsch's process, however, is of far greater value than if it had merely presented chemical science with a new test for arsenic. It constitutes the simplest, easiest, and most secure mode of separating arsenic from the most complex state of mixture, in such a condition as to enable the experimentalist to apply to the metal with great facility any of the characteristic tests already known.

The question then is, having thus an admirable method of obtaining the arsenic for examination, what are the most advisable properties to employ for testing it? What tests furnish in the circumstances the best evidence? For this is the point to which all chemical inquiries in medical jurisprudence ought to tend.

In my opinion, no method of testing approaches the following in facility, delicacy, or conclusiveness. Cut the copper, on which the arsenic is deposited, into small chips, so that they may be easily packed in the bottom of a small glass tube; and apply a low red heat. A white crystalline powder sublimes, and if this be examined in the

sunshine, or with a candle near it, a magnifier of four or five powers will enable the observer to distinguish the equilateral triangles composing the facets of the octaëdral crystals, which are formed by arsenious acid when it sublimes. Sometimes the three equal angles, composing a corner of the octaëdre, may be seen by turning the glass in various directions. If triangular facets cannot be distinguished, owing to the minuteness of the crystals, then shake out the copper chips, close the open end of the tube with the finger, and heat the sublimed powder over a very minute spirit-lamp flame, chasing it up and down the tube till crystals of adequate size are formed. Next, boil a little distilled water in the tube over the part where the crystalline powder is collected; and when the solution is cold, divide it into three parts, to be tested with ammoniacal nitrate of silver, ammoniacal sulphate of copper, and sulphuretted hydrogen, either in the state of gas, or dissolved in water.

Here I cannot help expressing my surprise, that both in the inquiries carried on in various quarters respecting Reinsch's process, and in the multitudinous researches that have been made on the subject of Marsh's method, during the last four or five years, by Professor Orfila, M. Lassaigne, MM. Danger and Flandin, M. Malapert, M. Coulier, M. Dupasquier, and M. Chevallier in France; by Professor Liebig, Mohr, Pfaff, and Petenkofer in Germany; by Mr. L. Thomson, Mr. H. H. Watson, and Mr. Marsh himself in Britain, and by other experimentalists who might also be mentioned, no one, to my knowledge, has bethought him of applying, as a test of the nature of an arsenical crust, the conclusive process described above, and first suggested to me in 1826,* by the late Dr. Turner, which consists in converting the metal into the oxide, in such a way as to allow the form of its crystals to be determined. The method, I have reason to know, has been in constant use in medico-legal researches in Scotland; but I have not heard of its being currently employed elsewhere. Yet, what other method is so satisfactory? What other metalliform substance but arsenic yields, by heat and oxidation, a white sublimate with triangular facets? Or, suppose this single character be thought not enough to characterize the substance under examination, what other character of the arsenical crust leaves the substance in such a state as to be so easily subjected to so many excellent supplemental tests?

In employing Reinsch's process, with the system of tests superadded, as now explained, the following particulars have incidentally occurred to me as worthy of notice:—

In boiling organic substances in the weak hydrochloric acid, care must be taken to ascertain that there is a decided excess of acid always present. Two fluid drachms to every eight ounces of liquid are in general sufficient; but if the organic matter be an animal texture in a state of decay, a much larger quantity of acid may be necessary, owing to the presence of ammonia, which tends gradually to neutral-

* See Edin. Med.-Chirurg. Transactions, ii. 292. 1826.

ize the acid as the solution goes on. Reinsch does not advise filtration of the fluid after the acid has acted sufficiently on the subject of analysis. But notwithstanding the delay occasioned by filtration, this seems to me advisable in most instances, otherwise organic particles are apt to attach themselves to the copper, and thus give rise to empyreuma when the metallic arsenic is driven off by heat.

The most convenient form for using the copper is that of copper-leaf; but ordinary plates of copper may be easily made of any degree of fineness by immersing them for a time in diluted nitric acid. Where the quantity of arsenic in the fluid is supposed to be small, nearly half an hour should be allowed to elapse before the copper is removed. Before applying the sulphuretted hydrogen as a test to the solution of the sublimed oxide, the solution must be acidulated with hydrochloric or acetic acid. In every case the whole process should be applied, in the first instance, to distilled water, acidulated with the hydrochloric acid to be employed afterwards; and if the copper be tarnished, a purer acid must be obtained, or the copper must be subjected to the subsequent steps of the process in order to ascertain whether the tarnishing be occasioned by arsenic or not.

I have employed the preceding method in two medico-legal cases. In one, where the body had been buried for four months, and where the arsenic had been detected in the contents of the stomach by Marsh's method, and in a portion of the liver in the same way, preceded by Orfila's process for the destruction of animal matter,—I succeeded very easily in obtaining from about a sixth part of the stomach, after it was thoroughly washed, repeated steel-coloured crusts upon copper, which, when heated in a tube, gave out white crystals with triangular facets; and the solution of these crystals gave characteristic indications with the three liquid reagents, ammoniacal nitrate of silver, ammoniacal sulphate of copper, and sulphuretted hydrogen water. In the other case, also four months after interment, the contents of the stomach, boiled with muriatic acid and filtered, were not visibly altered by a stream of sulphuretted hydrogen gas which was applied to a drachm of the fluid. Nevertheless Reinsch's method yielded precisely the same results as in the former instance. A portion of the liver, amounting to a sixth of the whole organ, which had been sent from the country along with other materials for analysis, was then subjected to the same process. Arsenic was also indicated, but in very minute quantity. I was satisfied with the application of one liquid reagent to the solution of the sublimate, namely, the ammoniacal nitrate of silver; but there was solution enough for all three. By the same method as that applied to the liver I obtained arsenic in larger quantity from one half of the stomach.

The experience I have had of this method of analysis in medico-legal researches, brief though it be, is yet sufficient to convince me, that it must soon supersede the beautiful but much more elaborate method of Mr. Marsh. It may be applied even to the tissues of the stomach, and, including the process of filtration, in the short space of two hours.—*London and Edinburgh Monthly Journal of Medical Science.*

Observations and Researches upon a new Solvent for Stone in the Bladder, by Alexander Ure, A. M.—In pursuing some inquiries relative to the treatment of certain forms of urinary disease, my attention was directed to the properties of carbonate of lithia, a substance of which no therapeutic application has been heretofore made. It nevertheless occurs as a constituent of various mineral waters; namely, in those of the Kreutzbrunnen of Marienbad, of Klausen, of the Josephsquelle at Bilin, of the Obersalzbrunnen in Silesia, of Lubien in Galicia, of the Kränchen at Ems, and of the Franzensbrunnen at Eger. The four first-named waters have, according to Osann, one of the latest and most complete writers on the subject, been found of service in some unhealthy conditions of the urinary organs.

Carbonate of lithia dissolves in water at the ordinary temperature of 60° Fahr., to the amount of one per cent. From its sparing solubility it may be said to form the connecting link between the earths and alkalis. It possesses a faintly alkaline by no means unpleasant taste. No opportunity has yet been afforded me of ascertaining whether it passes through the circulation unchanged, although analogy would lead to the supposition that such was the case. It has a remarkable affinity for uric acid, so much so, that if finely pulverized *lepidolite* (a hard siliceous mineral containing three or four per cent. of lithia) be boiled along with uric acid in water, urate of lithia is formed. A fact pointed out by M. Lipowitz, and which has been lately verified by myself.

According to the chemist above mentioned, one part of carbonate of lithia dissolved in water and boiled along with an excess of uric acid, dissolves four parts of the latter, which are held in solution after cooling. Urate of lithia is indeed the most soluble salt which that acid forms. It crystallizes by evaporation in the shape of small grains, which require sixty parts of water at the temperature of 60° Fahr. to dissolve them. It contains 14.4 per cent. of lithia.

In order to determine the solvent powers of carbonate of lithia with reference to uric acid and its compounds, at the common temperature of the human body, I instituted the following experiments:

A solution of one grain of carbonate of lithia in an ounce of distilled water was brought to a temperature of 98°, and pure uric acid gradually added in minute portions until it ceased to dissolve. The quantity thus taken up was 23 grains. The resulting solution which remained unchanged the following morning, being saturated with hydrochloric acid, threw down a precipitate of uric acid, amounting to two grains. Now it will be seen by referring to my paper on the "solvents for calculous concretions," published in the fifth number of the *PHARMACEUTICAL JOURNAL*, vol. i., that one grain of crystals of soda, dissolved in an ounce of water, took up only one grain of uric acid—that one grain of carbonate of potash took up 1.4 grains—one grain of borax 1.2 grains—and four grains of bicarbonate of soda 1.1 grains. Hence it follows that the solvent power of carbonate of lithia is more than double that of carbonate of soda; nearly double that of carbonate of potash or borax; and about eight

times that of bicarbonate of soda, which is the active ingredient of the Vichy water.

A human urinary calculus, now on the table of the Society, composed of uric acid with alternate layers of oxalate of lime, having been most accurately poised, after being previously brought to hygrometric repose, by digesting in fresh urine and then carefully dried, was placed in a solution of four grains of carbonate of lithia, in an ounce of distilled water, and steadily maintained at a blood-heat by means of a water-bath, during five consecutive hours. On being withdrawn, nicely washed, and again dried as before, it was found to have lost five grains in weight, which is at the rate of one grain an hour. The calculus is deeply eroded in different parts, but the delicate laminæ of oxalate of lime remain intact, imparting to the surface the appearance of deep etching. The menstruum acquired a pale yellow tinge, and there fell down from it on cooling a light flocculent deposit of urate of lithia, in which silky crystalline tufts could be discerned by help of the microscope. It was still alkaline to litmus. Decomposed by means of hydrochloric acid, it yielded nearly three grains of pure uric acid.

In another experiment, the remaining half of the same calculus being allowed to stand during four hours in two ounces of the natural Vichy water, from the spring called *Hôpital* (containing three grains and a half of carbonate of soda), was found to have parted with two-tenths of a grain of uric acid; while the former portion of the calculus, placed under precisely similar circumstances, at the same time, in a solution of 1.6 grains of carbonate of lithia to two ounces of distilled water, afforded nine-tenths of a grain of uric acid. Thus is demonstrated the very superior solvent agency of the above feeble lithia solution over the Vichy water.

Half a grain of urate of soda (the ordinary basis of gouty concretions or chalk stones) diffused in an ounce of distilled water at the blood heat, completely dissolved with the addition of one grain of carbonate of lithia, the solution continuing limpid and unaltered; whereas, half a grain of the same urate in a similar quantity of water at a corresponding temperature, rests apparently unchanged, as may be seen in the two phials before you. Urate of soda, as pointed out in my paper on Gouty Concretions, published in vol. xxiv. of the *Médecino-Chirurgical Transactions*, is about as insoluble as uric acid.

It deserves notice, that when fresh healthy urine is rendered alkaline by carbonate of lithia, no deposition ensues.

A very large proportion of the stones which occur in the urinary bladder of man, are composed in whole or in part of uric acid. Of all the various menstrua hitherto recommended, none appears to promise more favourably than the carbonate of lithia, from the promptitude and energy with which in dilute solution it attacks calculi of this description. If by means of injection we can reduce a stone at the rate of a grain or more an hour, as the above experiment would lead us to anticipate, we shall not merely diminish the positive bulk of the calculus, but farther loosen its cohesion, disintegrate it, so to speak, causing it to crumble down and be washed away in the stream of the

urine. Cases may present themselves in which it may be expedient to conjoin the use of the lithonriptor; but only occasionally and at long intervals. It is the frequency of repetition which renders that instrument so hazardous.

It may be presumed, moreover, that the plan of throwing in a weak solution of this kind, would generally exercise a beneficial influence in obviating irritation, by removing the sharp angular points and asperities of the broken fragments, where the practice of crushing is adopted.

No apprehension need be entertained from the administration of injections, if judiciously directed. Sir Benjamin Brodie found that the bladder bore without inconvenience a stream of fluid composed of two minims and a half of nitric acid for each ounce of distilled water.* An Austrian surgeon has recently introduced vinegar into the bladder with excellent success, in an instance of phosphatic calculus. Mons. Lisfranc, the eminent French surgeon, has used in like manner tincture of cantharides for the cure of enuresis; and I myself have thrown a dilute solution of nitrate of silver into the bladder, with the best effect, in cases of chronic catarrh of that viscus.

Nothing has hindered me from trying the carbonate of lithia but its extreme scarcity. I would, therefore, suggest the importance of its preparation to the pharmaceutical chemist. The mineral called *spodumene*, which is found at Killiney near Dublin, contains, according to Stromeyer's analysis, 5.6 per cent. of lithia.

My best thanks are due to Mr. George Knight of Foster-lane and to Mr. Morson, for supplying me with the specimens of carbonate of lithia employed in the preceding investigation.—*Pharmaceutical Journal*.

On some Preparations of Balsam of Copaiva, by Mr. Jacob Bell.—Balsam of Copaiva has been minutely examined, and its composition is described by several French Chemists. Berzelius also has given a detailed analysis in his *Treatise on Chemistry*, and many persons in this country have experimented on the subject, with the view of separating the active principles, or contriving an elegant mode of administering a nauseous remedy.

There are in the market two varieties of the balsam, which are known on the continent, and distinguished in the French price-lists as the *solidifiable* and the *non-solidifiable*; the price of the former being about ten per cent. higher than that of the latter. This distinction is not generally observed in this country, and the two varieties are sold indiscriminately, both being considered genuine. This circumstance, together with the occasional sophistication of the article, has given rise to some discrepancy in the statements of chemists respecting the composition of the balsam. The only tree which is recognized in the London Pharmacopœia, as yielding the Balsam of Copaiva, is the *Copaifera Langsdorfii*. We are, however, unable by any chemical process to identify this product from that of some

* London Medical Gazette.

other varieties of the genus, of which fifteen or more are mentioned by Dr. Pereira. and other authorities.

Balsam of Copaiva, as it is usually found in the market, consists of a *volatile oil*, a *yellow hard resin* (called *resin α* , or *copaivic acid*), and *brown soft resin*, (called *resin β*). The substance sold as extract or resin of copaiva is prepared by simple evaporation, and consists chiefly of the hard resin. It is generally considered to possess but little medical action on account of its insolubility. A soluble extract is also sold, which is prepared by means of potash or soda, and is a resinate of the alkali resembling a soap.

By boiling the balsam with magnesia or hydrate of lime, the whole is solidified and brought to a pilular consistence, and this preparation is said to be more efficacious than even the balsam itself, while it is less objectionable to the palate. A description of the process is quoted in the PHARMACEUTICAL JOURNAL, vol. i., page 655, from the *Journal de Pharmacie*.

The solidification is more easily effected by means of lime than with magnesia, the object being attained generally in four or five hours, or even less, with one-fifteenth of the weight of hydrate of lime, while an eighth of calcined magnesia is required to produce the same result in from twelve to fifteen hours. This preparation is sold in France, in the form of sugar-plums, being covered with a coating of sugar. It is also sometimes enclosed in capsules of gelatine,

When balsam of copaiva is boiled with liquor potassæ, the mixture separates into two portions, a white oily substance or emulsion, which floats on a yellowish clear liquid. After standing for a day or two, the upper stratum becomes quite clear, the potash being thrown down, and the residue consisting of essential oil. The clear liquid is a solution of the resin in combination with potash. When evaporated to dryness, it assumes the character of the soluble resin before mentioned. Caustic soda may be substituted for potash.

This liquid is generally supposed to form the basis of a patent medicine, sold as Frank's specific; and it has been thought by some persons to contain the most active and efficacious portion of the balsam. A small quantity of sweet spirit of nitre is added to it in order to increase the effect. The following is a formula adopted by Mr. Rowland, of Liverpool:

Balsam of Copaiva	} of each equal quantities.
Liquor Potassæ .	

Boil for ten minutes, and to each pint (sixteen ounces) of the mixture add two ounces of sweet spirit of nitre. Allow it to stand a few hours, and draw off the clear liquid by means of an orifice in the lower part of the vessel.

On trying this process, it appears that the quantity of liquor potassæ is scarcely sufficient to decompose the balsam effectually; and the addition of a little water is an improvement, reducing the result to a state of dilution, which is more convenient for use, and resembling more nearly the nostrum of which it is an imitation.

The following proportions have been found to answer the purpose. A mixture, thus prepared, is much less nauseous than the balsam, and may be taken in the same doses as Franks's specific; namely, a dessert-spoonful twice or three times a day:

Balsam of Copaiva, two parts.

Liquor Potassæ (or Sodæ), three parts.

Distilled Water, seven parts.

Boil for a quarter of an hour, then add

Sweet Spirits of Nitre, one part.

Separate the clear liquid, as directed above by Mr. Rowland.

This preparation is miscible in all proportions with water, on which account it has been termed *soluble copaiva*. The term, however, is incorrect, as the preparation is merely a solution of the saponified resin, and contains but little, if any, of the oil. It has been supposed that a portion of the oil is converted into resin by the action of the potash, with which it combines. If this theory were correct, we might expect the whole of the oil to be so convertible by continuing the process; but this does not appear to be the case, as the bulk of the oil is found on the surface after the operation.

Patients, who have taken the alkaline liquid, represent its effects as being similar to those of the balsam, but milder and less irritating; and many persons can take it without inconvenience whose stomachs will not bear the balsam in its natural state.

Notwithstanding the efficacy which has been attributed to this preparation, there are many authorities who consider the volatile oil of copaiva the most active and useful constituent, and large quantities of this oil are obtained by simple distillation of the balsam, the residuum constituting the resin of copaiva. The oil is sometimes taken in doses of ten or fifteen drops floating on water, or disguised by mucilage, or some aromatic tincture. This being a nauseous remedy, various means have been adopted for making the oil into pills; for which purpose the following is the best method, although it is by no means an easy operation to accomplish:

Oil of Copaiva, 120 drops (equal to 70 minims).

Soap, 20 grains.

Calcined Magnesia, 2 drachms.

Mix and form into twenty four pills. It is very difficult to reduce the mass to a proper consistence; and when this is done, unless it be instantly divided into pills, it crumbles into powder, or by continuing the trituration, it becomes liquid and loses all its adhesiveness. When the pills are formed they soon harden, and retain their form perfectly well. Although each pill contains five grains of magnesia, besides the soap, and five drops of the oil, they are not larger than ordinary five-grain pills.

The soluble resin, when soft enough to roll into pills, is too soft to retain its form, unless a little gum and liquorice powder be added, to overcome the tendency to fall. The insoluble resin is more easily managed, by pouring boiling water into the vessel containing it,

which makes it soft enough to divide, without dissolving any portion; the pills, on cooling, become quite hard and durable.

Black pitch may be made into pills in the same manner.

Among other preparations of copaiva may be mentioned the "*Sal Copaibæ*," of Mr. Allen (Briggate, Leeds). The mode of preparing this salt is not published. It was introduced a few years ago, and was tried by Dr. Elliotson and several other medical men in their practice; but the expense of the remedy was an obstacle to its general use, being sold wholesale about 24s. an ounce. It was stated by the maker to possess all the properties of the balsam in a concentrated form, the dose being from two to five grains. It was also recommended as an expectorant in combination with oxymel, and in cases of dysuria with subcarbonate of soda. If the salt possess all the virtues ascribed to it by Mr. Allen, it would be a valuable addition to our list of preparations, and the subject deserves further investigation.

There are some practitioners who advocate the use of the balsam in its natural state in preference to any of its preparations, and for those who object to taking it in water, order the capsules as the most convenient form for administering the remedy. The method of making the capsules is described in the *Pharmaceutical Journal*, vol. ii. page 769.

It is stated by Dr. Rees of Guy's Hospital, that when the balsam of copaiva is taken by itself it may be detected unaltered in the urine in the following manner. Several consecutive doses having been taken at short intervals, a portion of ether is to be added to the urine, and, after agitation, it is to be allowed to separate and poured off. The ether dissolves the balsam, and by exposure to the air for a short time evaporates, leaving the balsam in the capsule. It is stated that when the balsam is taken with potash this result cannot be obtained, and it might be expected that the alkali, by rendering it soluble, would promote its complete decomposition in the system.

There is good reason to believe that the balsam of copaiva is more efficacious when saponified by means of an alkali, and one of the most common modes of administering it is in the form of emulsion with liquor potassæ. By mechanical suspension with mucilage, or the yolk of an egg, a mixture similar in appearance may be made; but this is liable to separate unless the alkali be added. The following is a good recipe:

℞ Balsami Copaivæ, ʒ iij.
Misturæ Acaciæ, ʒ vj.
Liquoris Potassæ, ʒ iss.
Syrupi Aurantii, ʒ ss.
Aquæ Distillatæ, ʒ ivss. Misce.

Dose—Two or three table spoonfuls.

It may be as well to make one remark (which applies generally to oleaginous mixtures in which the oil is suspended by mucilage), that the mucilage should be put first into the mortar and well incorporated

with a small portion of the balsam before the rest is added, and the syrup should be added after the emulsion is completed. Another form of mixture may be mentioned, which some patients prefer.

℞ Balsami Copaivæ.

Spiritus Lavandulæ Comp. ana ʒ iij.

Liquoris Potassæ, ʒ ij. M.

Dose—A teaspoonful in water twice or three times a day.

The lavender serves to disguise the flavour of the balsam. Of all the preparations which have been enumerated, the alkaline solution of copaiva may be considered, in some respects, the least objectionable. Being deprived of the essential oil which is generally considered to be the most irritating principle, it is mild in its action, and it is less nauseous than the other mixtures on account of the perfect union of the alkali with the resin.

Mr. Mowbray enquired whether Mr. Bell had not observed a milkiness in the liquid on adding the sweet spirits of nitre to the alkaline solution, arising from the existence of free acid in the spirit. He had observed in Franks's specific that a portion of the alkali was in the state of a carbonate; and he had good reason to believe that it also contained an aromatic—cardamom seeds having been macerated in the sweet spirit of nitre, he had understood, in the proportion of an ounce to a pint. He observed that, commercially speaking, the two kinds of balsam were designated as New York and Para; the former being non-solidifiable, and less esteemed than the other. He said Mr. Bell had omitted one preparation of copaiva which ought to be noticed, namely, the copaivate of iron, which might be obtained by adding sulphate of iron to the solution of copaivate of potash.

Mr. Bell replied, that he had not met with any inconvenience on adding the sweet spirits of nitre to the alkaline solution, as he conceived that the quantity of potash named was quite sufficient to neutralize any free acid which might be present. He had tried the effect of substituting carbonate of potash for the caustic alkali, and was not at all satisfied with the result, as a very imperfect soap was produced.

The Chairman said it was worthy of remark, that in distilling the balsam in a copper still, a considerable quantity of copper was dissolved by the resin. He thought the best way of preparing the resin was to evaporate the balsam in an open dish, proper precautions being used to prevent accidents by fire.

On the table were specimens of the preparations alluded to in the paper, and also a box of pills made according to the formula.—*Pharmaceutical Journal*.

Woorari, or Wourali, Poison.—This poison is chiefly manufactured by the Macoushi Indians, who inhabit British Guiana, between the rapids of the Demerara river, and the high mountains of the interior. It is employed for arming the points of the arrows which are used by the natives in their warfare, and also in catching wild animals. These arrows are projected by a kind of blowpipe, called

a sirvatan. A wound, caused by one of the poisoned arrows, is said to take away life, like a magic wand, without producing the slightest pang.

Considerable doubt exists as to the composition and preparation of the Wourali poison.

Dr. Pereira says, the basis of it is obtained from the *Strychnos toxifera*.

Orfila adopts the opinion of Bancroft, that it is obtained from some species of climbing plant.

Gray, in his supplement to the *Pharmacopœia*, says, "the *Wooraroo poison*, or *balsam arouaroa*, flows from the *icica hetaphylla*, and smells like citron."

We are not informed on what data these opinions are founded; but the great interest which the subject at one time excited, and the mystery in which it was enveloped, induced some scientific travellers to endeavour to obtain authentic information on the points in question. In the year 1813, Mr. Waterton, an English gentleman of independent property, having visited Demerara at his own expense, and solely with scientific objects, travelled 800 miles into the interior, for the purpose of ascertaining the precise facts connected with the preparation of the Wourali poison. The privations and toils he endured during this journey, are detailed in his "*Wanderings in South America*." All the information he could obtain, amounted to the statement, that the poison is made by the Macoushi Indians, from the Wourali vine and several other plants, the strongest Indian pepper, two species of ants, and the fangs of two species of snakes.

Mr. Waterton's book, however, contains much interesting information respecting the effects of the poison, and the method of using it adopted by the Indians. The arrows which are employed for conveying the poison to the destined prey, are from nine to ten inches long, made from the leaf of a species of palm, hard and brittle, and pointed as sharp as a needle. The blowpipe or tube, from which the arrow is propelled, is from ten to eleven feet in length, consisting of a hollow reed which grows to this length, without any knot or deviation in its diameter, and this reed is enclosed in a case of a stronger material made from a species of palm. Some wild cotton being wound round the end of the arrow to make it fit the hollow of the tube, the practised Indian propels the deadly weapon, by the force of his breath, to a distance of three hundred feet.

At a subsequent period Dr. Hancock, who resided in South America, and chiefly in British Guiana, from the year 1804 to 1828, undertook a further investigation of the subject, the result of which is published in the *Quarterly Journal of the Royal Institution*. He says:

"Having examined the Mandavacs, Francisco and Domingo, two intelligent Indians, who were born and bred on the spot of the tribe most famed for producing the most active worari, and who lived in

the vicinity of the mountains which produce both the deadly poison and the instrument of its conveyance, I have received from them separately a most correct and satisfactory account of this affair.

“These Indians stated, that both for the *mavacuri* and *sarsa*, they go up the Siapo and contiguous streams, or about the mountains of Unturan and of Achivucary, as observed by Humboldt.

“They could give, however, no information respecting the flowers; but they knew the plant well, and called it *mavacuri*; and they state, that it is of the gourd kind, or one of the cucurbitaceæ, of the size of a large orange, round, and having a hard shell, or pericarp, which is used at times to contain the poison.

“The mahwy, they say, is the plant of which they make the blowpipe for projecting the arrow.

“In regard to the manufacture of the poison, they say, that they in general add nothing, though some, to thicken it, add the bark. They merely peel or scrape off the bark, and bruise it well in a mortar. The mass is then put into a funnel, or cartucho, made with wild plantain leaves, and having a little cotton at the bottom to strain it; plenty of cold water is poured over it, and they proceed in the same manner as in drawing the lixivium of ashes. This infusion is put into an earthen pot, and boiled down to a proper consistence.

“This was related circumstantially by Domingo and Francisco separately. They had no idea of the addition of other substances (ants, &c.), serving, in reality, only to dilute, and render the poison less active, as prescribed by the Indians living near our settlements; all of which are but inventions, like those of the charlatans of Europe, to throw mystery over the affair, and enhance the value of the art.”

The following extract from a letter addressed to Dr. Hancock by Mr. J. Forsyth, contains some further information on the subject.

“I received your letter of the 30th ult., requesting a specimen of the worari vine. I am sorry it is not at present in flower; but I send you a small branch of it, and two other vines, called *worarybally* and *courampoey*, which the Indians use as auxiliaries to strengthen the former. You will also receive two small roots of the worari vine, which will grow if immediately planted; it will require a great proportion of sand mixed with the earth it is planted in, as it is found growing on sand-hills.

“The mode of preparing the poison is as follows:—The inner bark or rind of the root (for it is the root only that is used), is scraped off into some vessel. The worarybally-root undergoes the same process; but it is the vine itself of the courampoey that is used. To these, mixed together and well boiled down with some water, the Indians add some peppers, and further boil the whole mass to a thick syrup.

“This account of the process, I have had from the Indians; but they are to bring some of these roots, &c., and make the poison in my presence. I shall, therefore, have it in my power, I hope, hereafter, to give you a more accurate description of this process.”

In a communication made by Dr. Hancock to the Medico Botanical Society, in 1837, he adds to his previous statements, that in the preparation of the poison by the Macoushi's, the slimy barks of the kyheri and quasima are added to give tenacity to the extract.

Dr. Hancock has remarked, that

“If such a thing does exist in nature as a direct sedative, in the strictest sense of the term, I should imagine it to be this extraordinary vegetable extract. Its operation on the animal frame is most mysterious. It extinguishes the vital spark without a pang or a struggle, if prepared without any other substance being added; for the most efficient poison is prepared from the worari vine alone. The sensation and effect it produces are extremely analogous to those which arise from excessive bleeding—the animal under its influence sinking from existence in the most placid swoon.”

It appears that the Indians are acquainted with means for recovering animals from the effects of the poison, and are in the habit of shooting monkeys, birds, &c., with the poisoned arrows, and after bringing them to the ground, resuscitating them; by which means they carry on a considerable traffic in these animals.

In “Mayo's Outlines of Physiology,” a case is described in which a horse, suffering from a severe attack of tetanus and locked-jaw, the mouth being too firmly closed to admit the introduction of either food or medicine, was inoculated on the fleshy part of the shoulder with an arrow point coated with the Wourali poison; in ten minutes apparent death was produced. Artificial respiration was immediately commenced and kept up about four hours, when reanimation took place; the animal rose up apparently perfectly recovered, and eagerly partook of hay and corn. He unluckily was too abundantly supplied with food during the night. The consequence was, over-distention of the stomach, of which the animal died the following day, without, however, having the slightest recurrence of tetanic symptoms.

Sir B. Brodie, in two papers read before the Royal Society in 1811 and 1812, has described the results of some experiments performed with this poison.

“Some woorara was inserted into a wound in a young cat. She became affected by it in a few minutes, and lay in a drowsy and half sensible state, in which she continued at the end of an hour and fifteen minutes, when the application of the poison was repeated. In four minutes after the second application, respiration entirely ceased, and the animal appeared to be dead, but the heart was still felt acting about one hundred and forty times in a minute. She was placed in a temperature of 85° Fahr. and the lungs were artificially inflated about forty times in a minute. The heart continued acting regularly. When the artificial respiration had been kept up for forty minutes, the pupils of the eyes were observed to contract and dilate, on the increase or diminution of light, saliva had flowed from the mouth, and a small quantity of tears was collected between the eye and

eyelids, but the animal continued perfectly motionless and insensible. At the end of an hour and forty minutes from the same period, there were slight involuntary contractions of the muscles, and every now and then there was an effort to breathe. The involuntary motions continued, and the efforts to breathe became more frequent. At the end of another hour, the animal for the first time gave some signs of sensibility when roused, and made spontaneous efforts to breathe twenty-two times in a minute. The artificial respiration was discontinued. She lay, as if in a state of profound sleep for forty minutes, when she suddenly awoke, and walked away. On the following day she appeared slightly indisposed; but she gradually recovered, and is at this time still alive and in health."

Sir B. Brodie found that the best method of applying the poison was to mix it with water to the consistence of a thin paste; then to make a wound, and smear the poison over it with the end of the scalpel. He also found that the effect was more speedy and certain, if there were some, but not much hæmorrhage.

It is necessary to keep the wourali in a perfectly dry state; and when thus preserved, it appears to retain its properties for a considerable number of years. Mr. Iliff applied some which had been thus kept for twenty-seven years, and it killed the animal in a few minutes. Dr. Handcock and Mr. Iliff both state, that the poison may be taken into the stomach without injury, a considerable quantity having been administered to animals by the mouth, without producing any sensible effect.—*Pharmaceutical Journal*.

Case of Iliac Tumour, by Dr. Orpen, of Cove.—C. D., ætat. 22; unmarried; heretofore a healthy, lively girl, felt a sense of uneasiness, and occasional dull aching pain in the right iliac region, for some weeks previous, and was surprised one day to find a tumour there about the size of an egg, which gave her so little uneasiness that she did nothing for it; but as it continued to increase and become more painful, she acquainted her mother of it, who sent for me on the 4th of May last. On examination I found a circumscribed tumour, about the size of a large orange, in the right iliac region, nearly on a level with the spinous process of the ilium. It felt rather elastic, smooth, and tense; not very hard, or uneven; tender on pressure; integuments healthy, and moved easily over it; no fluctuation discernible; and she complained of pains shooting across the abdomen. Tongue foul and moist; skin hot and dry; pulse 100; bowels confined. The only cause she could give for the tumour was, that about seven months previous, while getting up on an outside car, the horse went on while her foot was on the step, and in endeavouring to recover herself she fell forward on the rail of the car; but it caused so little pain at the time that it did not prevent her from continuing her drive, and she never thought of it afterwards until I questioned her. This gave me a gloomy prognosis, as I feared she might have received

some injury of the right ovary. However, to satisfy myself whether it was any collection in the cœcum, I ordered her a smart purgative of calomel, rhubarb, and James's powder, and an enema of turpentine and castor oil the following morning. This cleared out the bowels well, and removed the distention; but I found the tumour larger than before, and extending more towards the uterus, and she felt pain and numbness occasionally down the right leg.

I proposed a consultation, but she preferred leaving the case in my hands.

On the 6th of May I commenced the following treatment:—I ordered ten to twelve leeches to be applied to the tumour every week for three weeks, and stupes of Decoct. Papaveris afterwards, and hemlock and linseed poultice, and these pills:

℞ Massæ Pil. Hydrarg. ʒij.
 Ammon. Gum. Resin. ʒi.
 Ext. Tarax. ʒij.
 Conii ʒij.
 Sapon. ʒi.
 Sulp. Antim. Aurat. gr. xxv.

M. In Pil. lxx. divid. Cap. binas O. N. et unum O. M.

And in a week after this diuretic mixture:

℞ Decoct. Sprt. Gunistæ ʒxij.
 Niträt. Potassæ ʒij.
 Tinctura Scillæ ʒiij.
 Spt. Etheris Nit. ʒiij.
 Spt. Juniperi ʒi.

M. Cap. ʒi. ter in die.

To be kept perfectly quiet, and to take a light farinaceous diet, with milk and soda water. On 1st of June, the tumour was as large and tense as before, but the tenderness and pains lessened; pulse 80: secretions copious; and tongue cleaner. I allowed her to lie on a couch by day, and to take chicken broth in addition to her diet. Stopped the poultices, and ordered the following ointment:

℞ Ung. Hyd. Camph. ʒiij.
 Hydriod. Potassæ ʒi.
 Iodinii ʒss.

M. Adfrictet pauxil. tumori O. N. et M.

And these pills in place of the former:

℞ Bin. Iodid. Hydrarg. gr. v.
 Massæ Pil. Rhei c. ʒi.
 Ext. Cassii ʒij.
 Ammoniäci ʒi.
 Pulv. Jacob. veri. ʒi.

In Pil. xl. divid. Cap. ij. O. N. et i. O. M.

June 20th, feels less tension about tumour, which is rather softer; decubitus on left side easy, which had previously given pain. Pulse 72; bowels open. Contin. July 6th, tumour for first time smaller,

softer, and less circumscribed. Pulse 86, small; bowels griped; some thirst; tongue whitish. Cap. Haust. ex Olei Ricini statim. Omit. pil. O. M. Admov. emplast. vesicat. tumori, et contin. unguent. August 1st, tumour softer, *flatter*, margins less defined. Pulse 68; breathing natural. Can stand up and walk about the room with little uneasiness. Cap. pil. i. O. alterna N. Admov. emplast. vesicat. porro tumori, and nourishing diet. 12th August, tumour receding every day; able to get out on the water, and walk without pain; strength increasing. Omit. pilulæ et contin. ungu. To use the "Tepid Salt Water Douche Bath" daily. 24th August, very little trace of tumour, which causes no uneasiness whatever, and bathes in the open sea. September 3rd, convalescent.

Pathology of Phlegmasia Dolens—Discussion at the Royal Academy—Remarks.—At a recent *seance* of this learned body, M. Capuron read an elaborate report on a memoir by M. Drouard on the disease known by the name of Phlegmasia Alba Dolens, and in which the author has attempted to prove that it is generally, if not always, connected with an inflammation of the crural and other veins of the affected limb. The question, it will be seen, gave rise to much discussion and difference of opinion; some assenting to this view of the subject, and others expressing their decided dissent. The result of the whole seems to be, that there are different forms of the disease, and that these are most probably owing to the operation of different causes.

M. Breschet objected to the opinion, expressed in the report just read, that *phlegmasia alba dolens* is in all cases the result of an inflammation of the veins in the affected parts. According to his experience, the lymphatic vessels are usually as much implicated in the morbid process as the veins. The phenomena of genuine phlegmasia are certainly not the same as those of ordinary phlebitis; and this, among other reasons, he considered a strong argument against the opinion of M. Capuron.

M. Capuron, in reply, said that he had by no means denied that the lymphatic vessels may be inflamed in this disease; but only that they are not primarily and necessarily so.

M. Blandin:—"It has been long imagined that Phlegmasia alba is a disease peculiar to women. This is not strictly correct; for, although of much more frequent occurrence in females, it is certainly not peculiar to them. When the disease was first recognised and described, it seems to have been regarded as a mere form of œdema; but, in proportion as its phenomena and cause were more attentively studied, it was found that in some cases the veins, in others the lymphatic vessels, and in others still the nerves were in a more or less decided state of inflammation at the time:—this M. Dance shewed in his interesting memoir on the subject. Subsequently, however, it has been discovered that the inflammation of the veins and that of the nerves are not of a necessary, but only of an occasional, coincidence

in phlegmasia; and that the only essential pathological character of the disease is an inflammation of the absorbent vessels of the limb. We must admit, however, that the inflammation of the veins sometimes precedes that of the absorbents, and we are therefore obliged to dissent from the opinion of our colleague, M. Breschet, who seems to regard the last-named vessels as invariably the seat of the disease in question."

M. Velpeau.—"Twenty years ago, when I published my first observations on this disease, it was almost universally maintained that the pathological cause was an inflammation of the lymphatic vessels of the limb. In consequence of several post-mortem examinations, I felt convinced that the veins were often more or less affected, and I expressed this opinion publicly. About the same time, Dr. Davis came to nearly the same conclusions in England. I have had very many opportunities, since that time, of studying the diseases of the venous and lymphatic systems, and have treated not a few cases of phlegmasia alba, and I now feel assured of the truth of the following two propositions: *first*, that the opinion of M. Dance and others, as to the nerves being in some cases inflamed, is utterly erroneous; and *secondly*, that the disease is primarily seated in the lymphatic vessels of the thigh; that a phlebitis is not necessarily existent; and, when it is, that it is only of consecutive or secondary development. But while I say this, I must also distinctly state that, in all post-mortem examinations of the affected parts, both sets of vessels have been found more or less seriously diseased. The phenomena of the disease in its first stage tend much to show that it is rather an *angieuleucitis* than a *phlebitis* that we have to deal with. There is then a general engorgement of the limb, with patches here and there of diffused redness, and irregular uneven nuclei or nodules of tumefaction, which are not necessarily found along the *trajet* of the veins, as in genuine phlebitis. The constitutional symptoms too, in proper phlegmasia dolens, are certainly not the same as in phlebitis; and it is only when both sets of vessels happen to be simultaneously implicated that we ever meet with the symptoms which denote the occurrence of purulent resorption and infection. In conclusion, I will briefly repeat my opinion that genuine phlegmasia alba dolens is attributable to an angieuleucitis or inflammation of the lymphatic vessels, accompanied with an inflammation of the adjacent cellular tissue, and occasionally also with inflammation of one or more of the veins of the limb."

M. Capuron here reminded the Academy that the opinion now expressed by the preceding speaker differs in almost every essential particular from that which he expressed not long ago, and pointed out the striking contradiction between M. Velpeau's present sentiments and those which he has published in his writings.

M. Cloquet.—"I agree with M. Blandin in the sentiment which he has expressed in his remarks, that phlegmasia alba is not necessarily or invariably met with in the female sex; as cases of it have

unquestionably occurred, in my own practice, among youths and men. I have experienced no little difficulty in forming any exact or definite opinion as to the ætiology of this disease. If I were to trust exclusively to the results of the post-mortem examinations which I have made, I should indeed be utterly perplexed what to say ; but, by having carefully watched the progress of many cases from their first stage, I have been enabled to form clearer and more accurate notions, as I think, on the subject under consideration. The result of my observation is that, as a general remark, the cellular tissue is primarily the seat of the oedematous swelling ; that an inflammatory engorgement, accompanied with effusion, takes place at first ; and that it is only consecutively that either the lymphatic vessels or the veins become affected. In my opinion we may regard phlegmasia alba as a specific exhalant inflammation of the cellular tissue, with or without an accompanying inflammation of the veins or lymphatic vessels of the part."

M. Moreau (the eminent obstetrical physician) took nearly the same view of the ætiology of phlegmasia alba as M. Cloquet. In his opinion, it is a specific disease which should not be confounded with an inflammation either of the absorbents or of the veins. " Phlebitis is always a serious, and often a most dangerous, disease ; phlegmasia alba, when uncomplicated with other lesion, is comparatively mild and innocuous. In proof that there is something special about the disease, we have only to bear in mind the circumstances which usually give rise to it. Is it not remarkable that often it does not occur for fifteen, eighteen, or twenty days after delivery, when the usual exciting causes of suppuration have entirely passed away ? Does not this circumstance alone suffice to show that the disease depends most frequently on the neglect of certain precautions on the part of women who have been recently delivered ? According to my own experience, it is generally owing to checked perspiration under such circumstances. At first there seems to be nothing but an indolent swelling, a simple engorgement ; this, if not relieved, is apt to be followed by inflammation of the absorbents, and in some cases of the veins also. It is only when the last named lesion is present, that there is any cause for alarm as to the issue of the case. I should define the disease in its primary stage to be '*une veritable inflammation exhalante du tissu cellulaire.*' "

M. Berard : " I have listened with a great deal of pleasure to the remarks which have just been made by MM. Cloquet and Moreau ; for I must frankly confess that I have never very clearly understood what part the alleged inflammation of the absorbents and veins has been supposed to act in the history of phlegmasia dolens. When the superficial absorbents of an extremity are really inflamed, the phenomena are usually sufficiently obvious to prevent any mistake in the diagnosis ; and certainly these phenomena are not those generally exhibited by the disease in question.

With crural phlebitis, it might be more easy to reconcile the

symptoms ; for M. Bouillaud has shown that an adhesive inflammation of a vein is apt to be followed by œdematous swelling of the part and its neighbourhood, in consequence of the obstruction to the free return of the blood. But, notwithstanding this plausible explanation, I must confess that I am much more inclined to adopt the pathological views of MM. Cloquet and Moreau. There is a fact which, although not bearing directly on the subject under consideration, may not be undeserving of notice here, I allude to the tendency which exists in puerperal women to the formation of diffused abscesses."

M. Andral: "The expression, *phlegmasia alba dolens*, is a very unfortunate one, and has tended not a little to keep up the obscurity that hangs over the subject: it is a complex term that embraces a variety of morbid alterations dissimilar from each other, and thus tends to perpetuate confusion. I agree with those gentlemen who have asserted that the disease is not confined (as alleged by M. Rochoux) to the female sex. I have seen unquestionable cases of it among men; but in them, as well as in women, always associated with a lesion of some of the pelvic viscera. I feel satisfied of the truth of this position, that wherever there is a *phlegmasia dolens*, we may at once suspect that there is something wrong within the pelvis. The 'point de depart' of the disease is an obstruction of the chief vein of the limb; this is the cause of the œdema.

"In every case which I have examined by dissection, I have found almost uniformly a correspondence between the lesion of the veins and some inflammatory process within the pelvis—the diagnosis of which, it must be confessed, is often exceedingly difficult during life.

"But I do not mean to assert that this complex disease is always, although certainly generally, dependent upon a mere obliterative phlebitis. Besides the lesion of the veins, there may be a lesion of the absorbent vessels, and also of the cellular tissue. In women the disease is generally a result of delivery; in men, either of some morbid affection within the pelvis, or of an injury of the lower parts of the limb."

M. Gerardin expressed his surprise that none of the preceding speakers had alluded to the connexion that certainly exists between the occurrence of the disease, at least in puerperal women, and the state of the mammary secretion. It is acknowledged by all writers, that it is more frequent in those who do not suckle their children than in those who do; and the sudden suppression of the milk has often been known to be quickly followed by an attack of *phlegmasia dolens*, as well as by sudden effusions into the cavity of the chest, abdomen, or of some of the joints.

Now the diseased action, in both sets of cases, is nearly the same; in the one, the effusion takes place into a cavity, while in the other, it is into the subcutaneous cellular tissue. It is sometimes surprising to see with what rapidity such effusions are in-

duced ; their gradual increase may be watched from one hour to another. It is usually asserted that phlegmasia alba is of much more frequent occurrence in the lower than in the upper extremities. Now the very reverse seems to me to be the case. (We do not remember having ever met with any statement to this effect before). It has also been said that the disease is seldom attended with any danger ; but such an opinion must be received with due caution, as a sudden effusion may take place into one of the internal cavities, or into the sheaths of the blood-vessels, and prove fatal either rapidly, or by a slow wasting process.—*Gazette Medicale*.

Remarks.—The attentive reader cannot fail to have remarked the great and more than usual discrepancy of opinion among a set of eminent men, the members of one of the first medical societies of the age, as to the nature of a disease which is not of very unfrequent occurrence. We are told by one learned academician that the veins are the parts most affected ; by another, that the lymphatic vessels are usually the seat of the morbid action ; by a third, that both sets of vessels, and the nerves of the limb also, are always more or less inflamed ; and by a fourth, that the disease is quite independent of all these parts, and is truly and essentially one of the cellular tissue. May we not, *à priori*, suspect from this very discordance of opinion, that the truth really lies, not in one nor in another of these doctrines, but in the *ensemble* of all put together ; and that the disease in question does not uniformly or invariably commence in one part alone ? Perhaps it might be said with more accuracy that, under the name of phlegmasia dolens, different diseases, more or less dissimilar from each other, are grouped together as if they were all cognate affections.

For our own part, we are certainly inclined to think so, and we cannot express our surprise that so accurate and cautious a pathologist, as M. Andral is, should regard an œdematous swelling of the thigh, supervening upon an injury of the foot or leg, as analogous with genuine phlegmasia dolens.

In studying this, as well as every other puerperal affection, we should never lose sight of the peculiar state of the constitution in which the morbid action is apt to occur ; viz. within from one to three weeks after delivery.

The loss of blood, the exhaustion of nervous energy, the excitable state of mind, the secretion of the milk and the systematic disturbance that so often accompanies it, the distention of the cellular tissue, &c. are so many circumstances which must render the puerperal state different from each other, even among females themselves, and which stamp with a peculiar character the diseases that are then apt to occur. No experienced physician will ever lose sight of this most important consideration ; and if it had been less neglected than it has been too often during the present century, we should have less cause to lament the not very creditable controver-

sies on puerperal fever, and the melancholy loss of life that has (on some occasions at least) been the consequence.

We have little doubt, in our own minds, that in a large majority, if not in all cases, of genuine phlegmasia dolens, there is some affection of the uterus, cotemporaneous with the outward and visible one of the thigh. We generally find that there is a greater or less degree of tenderness in the corresponding iliac region or even the pubes at the commencement of the attack, and the lochial secretion is always more or less disturbed. That this uterine affection is of an inflammatory nature is more than probable; but then, be it remembered, the character of the inflammation has something unusual and special; it has, if we may so speak, a peculiar idiosyncrasy; and it is this very peculiar idiosyncrasy that makes all the difference—and a most important one it is—between such an œdema of the limb as may supervene upon an injury of the foot, and the proper phlegmasia dolens of puerperal women.

Now, although we confidently deny that phlegmasia alba is either a phlebitis, or an angeioleucitis, or a neuritis, or all three together, we are ready to admit that each or all of these affections may exist simultaneously with it. Such complicated cases are, as a matter of course, more unfavourable than the others, and they will necessarily require certain modifications in the line of treatment to be pursued.

It is certainly much easier to say what the disease is not, than what it really is; and we must frankly admit that its pathology is (in spite of the researches of numerous observers) still very far from being satisfactorily made out.

With respect to treatment, the only safe plan is minutely to examine all the phenomena of each case by itself, and, independently of any preconceived hypothesis as to its nature, to watch its progress from day to day, and to adapt our remedies to the symptoms as they develop themselves, always paying the greatest attention to the state of the uterus, and keeping in mind the peculiarities of the female system in the puerperal state.—(*Rev.*)—*Medico-Chirurgical Review*.

Case of Hydro-pericardium; Puncture and Evacuatioa of the Fluid, &c.—A youth, 19 years of age, was seized with sharp pain in the right side of the chest, great dyspnœa, and other signs of pneumonia. He had been ill for some time when he was taken to the Vienna hospital; the active stage of the disease had already passed over, and was succeeded by the signs of effusion within the thorax. The face had become puffy and œdematous, and expressed intense anxiety; the breathing was short, hurried, and accompanied with a rattling noise; there was a frequent cough, which brought on a pungent pain in the left side; the left jugular vein was much swollen, &c. On percussion, the whole extent of the sternal region of the chest was found to be very dull; under the left clavicle, however, and along this shoulder on to the axilla, the sound elicited was

clear; but again it became dull over the lateral region of the chest. On the right side, the resonance was normal, except at the lateral parts from about the fourth rib. The liver was found to extend beyond the edge of the false ribs, for at least two finger breaths. The impulse of the heart was very feeble, and the sounds of its action very indistinct. There was a strong respiratory murmur (the expiratory one being unusually loud) heard over the whole extent of the left side, except the cardiac region, and also over the front of the right side: lower down, however, it was scarcely audible. The pulse was rapid, small, and irregular; the urinary secretion was scanty and deep coloured. The patient complained of a continual sense of pressure at the epigastrium, especially when he lay on the left side: firm pressure over the heart gave rise to a sharp pain in that region.

The diagnosis formed was that there was a considerable effusion within the pericardium—the consequence of pericarditis—causing the compression of the inferior lobe of the lung; also slight exudation in the right pleura, with an infiltration of the pulmonary parenchyma, the result of pneumonia; general bronchial catarrh.

As symptoms of a peritoneal effusion made their appearance in the course of a few days, it was determined to have recourse to *paracentesis pericardii* without delay.

The puncture was made (5th August) in the fifth intercostal space, about two inches from the left extremity of the sternum, and about one inch below the mamma—in order to avoid more certainly wounding the internal mammary, or any of the great vessels. At first, only a small quantity of reddish fluid escaped by the canula; but, by using gentle compression, as much as three pounds (livres) was discharged. The patient experienced great relief; and the double sound of the heart, as well as the “bruit de frottement,” were heard much more distinctly immediately afterwards. Next day, symptoms of inflammation in the lower lobe of the left lung made their appearance: the patient was therefore bled. For several successive days there was a manifest increase of the pericardiac effusion. Digitalis and iodine were administered, and mercurial frictions were employed at the same time.

As the disease was manifestly making progress, a second operation was performed (22nd August); but on this occasion not more than three-fourths of a pound of fluid flowed out. Again there was an attack of pneumonia; but it was fortunately subdued without much difficulty. The state of the patient seemed to improve until the 4th of the following month, when the dropsy of the pericardium and also of the peritoneum began rapidly to increase. Death took place on the 12th.

Dissection.—Adhesions of the right pleura, and considerable effusion in both cavities of the chest—to the amount of between eight and nine pounds (livres) on the left, and of about five on the right side: both lungs compressed and flattened against the spinal column,

and several patches of tuberculous deposit throughout their substance. Pericardium adherent to the heart over a great extent of its anterior surface; and several ounces of fluid within its cavity. The heart itself large and flabby; its cavities, especially those on the right side, considerably dilated, and filled with coagulated blood. From fifteen to sixteen *litres* of serosity within the peritoneum; this membrane somewhat thickened in several parts; the liver enlarged, dense, and of a brown-red colour.—*Schmidt's Jahrbucher.*

Remarks.—Most British physicians will unquestionably disapprove of the practice adopted in the foregoing case. No advantage could be reasonably expected from discharging the pericardiac fluid, while both cavities of the chest contained so much. We are not aware that paracentesis of the pericardium has ever been performed in this country. Without going so far as to reprobate the operation under any circumstances, the cases, we should think, in which it is justifiable, must be of exceedingly rare occurrence. It is a great error with many medical men to be desirous of doing something in every case; they seem to forget that there is quite as much skill required in knowing when to do nothing, as to employ vigorous treatment when this is called for.

A propos, we remember an anecdote of a clever but sarcastic surgeon, which may deserve reporting. On one of his colleagues, who was rather a busy, meddling sort of practitioner, remarking, in reference to a dangerous case in the hospital, that in his opinion such and such were the “indications of treatment” to be pursued, he very coolly observed that, in his opinion, “the only indication was death.” The lesson suggested is a useful one: *ne quid nimis.*—*Rev.—Medico-Chirurgical Review.*

United States Naval Hospital at Mahon.—Very many cases are brought to the hospital occurring among the seamen when on shore, during their liberty; and these cases are often severe injuries, received in their quarrels with one another, or with the Spaniards on shore. In the latter case, the injuries are often of a very serious character. Unacquainted with the use of the fist, the Spaniards, in these encounters, fly in every direction before the sailor; but, carefully storing up this defeat, and never permitting an opportunity of revenge to pass by, they clandestinely put a knife into the back of poor Jack, who is equally ignorant of their mode of fighting. Two of the cases of fracture admitted occurred on shore, one of them being a fracture of the lower jaw, from a blow with a stone, causing much injury to the soft parts; and it was only after some months of much suffering, during which it was found necessary to extract two of the molar teeth, that the patient recovered. Very many are brought to the hospital in an extreme state of intoxication and delirium tremens,—a disease which is encountered in naval practice, to an extent unknown in private life. Nowhere in life can so great a change be seen in the condition of men, as in the crew of a ship of war mus-

tered on the quarter deck to receive permission for liberty on shore, and the appearance of the same men twenty-four or forty-eight hours after. In the former case, they are all ruddy, hardy, happy chaps, in their neat sailor's dress, with ribbons flying, and their pockets filled with more money than they can properly spend during their short run on shore. In this state they land for the purpose of having "a good jolly drunk." At the termination of the leave, which never exceeds forty-eight hours, they are gathered together by the officers, often without hats, jackets, or shoes; their eyes blackened, and the few clothes on them in strips and tatters; and it is often necessary to hoist them on board in the same way as a portion of a ship's cargo.

We rejoice to have it in our power to say, that nowhere has the temperance cause done so much good as among seamen. Every inducement is, indeed, held out, by giving to the temperate a portion of each month's wages and frequent liberty. By holding out this inducement to all who will abstain from drink, and by this alone, may the whole character of the seaman be revolutionized. After the liberty of a crew of five hundred men, the surgeon will have more cases of delirium tremens under his care than would be encountered for a long period in private practice; but the disease is very easily treated among seamen, as we are always able to prevent a further indulgence, which so frequently thwarts the best directed efforts in private practice. During our experience of more than twelve years in the navy, but a single fatal case from this disease has come under our observation, and in that instance it was associated with hæmoptysis. The remedies in these cases are emetics and opium, and when there is much arterial excitement, venesection. The first two, however, are the means upon which we chiefly rely. The use of emetics in this disease is more loudly called for among seamen than in any other class of persons; for no sooner do they reach the shore than they commence eating and drinking the richest food and the worst of fruits and drinks that come in their way, until their stomachs are filled to repletion. In this condition, fluids alone can find entrance, and care is taken to renew the supplies so long as they are able to keep on their feet; and in this state of insensibility, they are brought to us for treatment. Here, a dose of ipecacuanha will be of more importance than any other remedy; and he will disgorge a mess sufficient to be a surfeit for any man. No sooner is he relieved from his burden, than sensibility and motion are restored; he opens his eyes in a furious, wild delirium, with the "horrors," and calls for something to drink. In this stage, a glass of hot toddy, with twenty-five drops of tr. opii, will seldom fail to tranquillize him; and a few doses more will induce a sound sleep, from which he will awake ready for another cruise either at sea or on shore. When this treatment does not succeed, and there is much delirium, with a full pulse, venesection should be resorted to. After this, the administration of opium and assafoetida, in large doses, will be sure to tranquillize the nervous system, and procure a profound sleep, which

last is, in all cases, the best restorer of exhausted nature.—*New York Journal of Medicine.*

A Curiosity in Obstetric Physiology, by John H. Griscom, M. D., one of the Physicians of the New York Hospital.—In the month of October, 1841, I was consulted by Mrs. R. M. H., for a hæmorrhagic discharge from the vagina, she being pregnant, as she believed, about seven months. This discharge had existed about five months, mostly every day, but sometimes ceasing for a while; but latterly it had become more steady. She described it as apparently not pure blood, but a mixture of blood and water, or very thin blood, of a bright colour, and never coagulated. She had felt the motions of the foetus with considerable distinctness, until within a month, since when they had diminished in strength and frequency, and for the last few days had totally ceased. Her general health (except some muscular pains, and some difficulty in moving about actively), and her appetite, were excellent. She was bled on the 16th, the blood being unusually black. The operation enlivened her much, and she thought she felt some movement of the foetus, but too indistinct to be certain of it. An examination of the abdomen, in the sitting posture, developed a general enlargement which was quite soft, with none of the uniform and peculiar firmness of the healthy impregnated uterus of that period. Midway between the umbilicus and pubis, the fingers could be pressed back nearly to the prominence of the sacrum. When this was done, there were distinct traces of a tumour, occupying the right iliac fossa, of an elongated form, and very tender to the touch, and a smaller tumour at the left side of the median line. The upper edges of both were distinctly perceived by the hand when pressed gently between them. There was no requirement for any interference until the 24th, when the husband came to me and said he believed she was in labour. I found her sitting up, and having what seemed very much like labour pains, every few minutes. These ceased in a few hours, but recurred slightly the following day. On the 26th she went to bed, complaining of severe pain in the abdomen generally, greatly increased at short intervals, but not subsiding entirely at the intermissions.

An examination, per vaginam, was now made, and a firm, round tumour was perceived, giving the distinct impression of a foetal head felt through the parietes of the uterus. It was moveable, as is ordinary in pregnancy, and motion was communicable through it to the abdomen.

The abdomen now became very tender to the touch, especially over the right tumour; the pulse rose to one hundred and thirty, and the tongue became coated; and though both tongue and skin remained moist, the tenderness of the abdomen soon became so excessive, that peritonitis appeared severely developed. The hæmorrhage from the vagina now disappeared, and did not recur. Active anti-phlogistic treatment was adopted, and each successive effort produced a subsidence of the symptoms, but for a few minutes only. The flame

would suddenly light up again, after a short period of ease to the patient, and of hope to the attendants, and burn with increased intensity, until, at the end of the week, she sank calmly in death.

When confined to bed, Mrs. H. first informed me that she had *always* doubted her being pregnant, though she had had many of the usual symptoms, such as enlargement of the mammæ, with exudation of their milk, motions of fœtus, etc.; but the latter were often so obscure, as to lead her to hesitate between them and borborygmi.

Autopsia in company with Drs. Boyd, Swett, and S. T. Smith.—The interior abdomen presented the usual appearances of inflammation of the peritoneum and intestines, with great vascular injection of the omentum, and loss of its substance; and among the folds of the bowels and through the cellular tissue, there was a large quantity of reddish purulent matter. In the right iliac fossa was a large tumour, of a blue colour, and towards the left was the uterus, about the size of that organ in the second month of pregnancy. Extensive recent adhesions existed between the bowels and the tumour, and in separating them, several ulcerated holes were discovered in the membrane covering the tumour.

The tumour was found to dip down into the pelvic cavity, and was subsequently observed to occupy its entire extent. The contents of the pelvis were removed and laid upon a platter for closer inspection. The uterus was first opened longitudinally; it was very healthy looking, except in size, and was entirely void of anything like a fœtus. It contained a small quantity of mucus, and its inner surface was copiously dotted with red points. The left fallopian tube and ovary were sound, as was also the right tube. The latter was traversed with some difficulty by means of bristles, up to the fimbriated extremities, which terminated against the tumour, the latter being in fact the right ovary, developed to the size of a large cocoa nut. This was opened longitudinally, and immediately there was brought to view a perfectly formed fœtus, of about six months, placenta and all complete. The child appeared to have been dead a considerable time; it was very soft, and the placenta was partially converted into purulent looking matter, similar to that found in the peritoneal cavity. It had escaped through the openings before noticed. The ovarium, as now seen, consisted of a large sac, of a mingled muscular and membranous texture, about as thick as a silver dollar, and was irregularly divided into three or four large cells by membranous partitions. The fœtal head presented towards the vagina.—*New York Journal of Medical Science.*

Antagonism of various Diseases. Comparative Infrequency of Consumption and Typhoid Fever in marshy Districts, by M. Boudin.—M. Boudin has, we believe, succeeded in establishing the fact, that both phthisis and typhoid fever are extremely rare in marshy districts, that this infrequency depends on a kind of protective agency exerted by the marsh miasm, and that the immunity is always proportioned to the degree of *impaludation*. It had been shown by M.

Chassinat that phthisis is much more prevalent among the galley-slaves at Toulon than at Rochefort; and that amongst the galley-slaves at Brest, also, the victims of that disease are nine times more numerous than at Rochefort, which is proverbially marshy. Having decidedly ascertained the influence of a marshy soil in the department of *Charente Inferieure*, M. Boudin wished to obtain certain data respecting the frequency of phthisis and typhoid fever in the marshy localities of *l'Ain*. For this purpose he wrote to several physicians, and especially to M. Nepple, from whose answer the following is an extract:—"For my part," says M. Nepple, "I have not the slightest doubt of the scarcity of phthisis in very marshy places, and this scarcity has always appeared to me to be in direct relation with the intensity of *impaludation*. Thus, whilst in the *communes*, situated in the midst of the marshy country, there does not occur a single case of phthisis, we find the number of them constantly increasing in proportion as we recede from the marshes. So that, at a certain limit, we find tubercles and intermittent fevers co-existing; but under these circumstances, the endemic intermittent is but of little intensity.

"Thus, at Montreuil, phthisis is any thing but rare, though intermittent fever occurs annually, but the miasmata producing this fever, before they can reach the town, have to pass the distance of a quarter of a league, and their influence is slight, superficial, temporary, and purely productive of fever. The entire system is not influenced or modified in such a durable way by them as to oppose the development of tubercle. It is altogether different in the midst of the marshy districts."

The following is an extract of a letter from M. Picoud, of Bourg, on the same subject:—"After more than forty-five years of practice, I have never found a case in opposition to your observations. I have in vain taxed my memory and consulted my notes; I have not met with any trace of tubercular disease occurring in the marshy districts. Wishing seriously to come to a true decision, I have not depended on myself alone, but have consulted many of my colleagues, and especially Dr. Huldelet, who has been for a long time physician to the hospital, and who has an extensive practice in the country about Villard, Marlieux, and other *communes* situated in the centre of the marshes; and he cannot bring to mind a single instance of phthisis occurring in those districts. I have remarked that the children of wealthy parents, who are sent from home to be educated, lose the benefit of the marshy country."—*Gaz. des Hopitaux*, September 2, 1843. *Provincial Journal*.

THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE,

JANUARY 1, 1844.

PART I.
ORIGINAL COMMUNICATIONS.

ART. X.—*On the Circulation of the Blood in Acardiac Foetuses (with a Wood-Cut), being a Reply to a Paper by Doctor Marshall Hall on this Subject.* By JOHN HOUSTON, M. D., M. R. I. A., Surgeon to the City of Dublin Hospital; Lecturer on Surgery at the School of Medicine, Park-street, &c. &c.

[Communicated to the British Association at Cork.]

OF the *cause* and *mode* of the circulation of the blood in *acardiac* foetuses various explanations have been attempted by physiologists, but none, as yet, which can be regarded as in all respects satisfactory.

At the Meeting of the British Association at Bristol in the year 1836, I made a report of an examination of a case of this kind which had come under my notice, and stated, therein, the physiological conclusions which I considered deducible from it;* and I am led again to the subject by the recent publication of a paper by Dr. Marshall Hall, questioning the correctness of

* See Dublin Journal of Medical Science, vol. x.

these conclusions.* As the British Association did me the honour of receiving my original statement on this head, I presume that I may calculate on a similar favour, now, that a defence of that statement has become necessary.

Dr. Marshall Hall's reasons for taking up the argument after such a long interval, may be best learned from his own words. "It is well known," he says, "that the late Dr. Young first suggested the most ingenious idea, that the circulation in the acardiac foetus is effected by the power and agency of the heart of the perfect foetus, by which the acardiac foetus is uniformly accompanied; that the late Sir Astley Cooper supposed that he had demonstrated this fact by his injection and dissection of the vascular system of the placenta or placentæ of the perfect and imperfect foetus in such cases; and that Dr. Houston of Dublin has called in question both the original views of Dr. Young and the *mode* of this circulation suggested by Sir Astley Cooper.

"My attention has been drawn to this subject by the recent able works of Dr. Carpenter and Dr. Graves. These gentlemen are of opinion that the views of Dr. Young and Sir Astley Cooper, regarding the circulation in the acardiac foetus, are erroneous, and they revert to the notion of Dr. Houston that the circulation is accomplished by the agency of the capillary vessels."

I may be permitted here to state, that Dr. Marshall Hall has been always a warm supporter of the theory, that in every instance "the heart affords the propelling force which circulates the blood through the capillary vessels," and very naturally combats any argument which would appear to militate against his long-cherished opinion: whereas, regarding myself, I did not, at the time of my original communication on this subject, nor do I, now, seek to make myself the champion of any

* See London and Edinburgh Monthly Journal of Medical Science, vol. vi. p. 541.

theory. I merely reported at the time the inferences which I considered deducible from the dissection I had made; and I must state that even now, the "opinions advanced" by Dr. M. Hall, "for they are nothing more," have not wrought any change in mine on the subject.

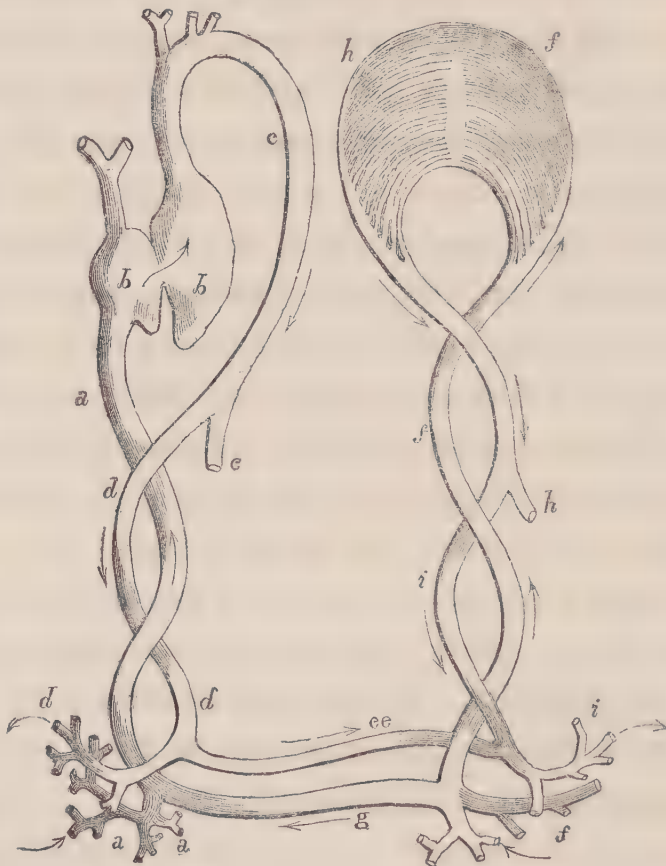
To make the matter at once intelligible, it will be right for me to state, that almost all the acardiac fœtuses hitherto described have been of twin birth, one of the infants being furnished with a heart. I say almost all; because Dr. M. Hall in his critique asks, has there ever been an exception to this rule? Two or three such have been recorded by Blandin, but if Dr. Hall chooses to take exception to their genuineness, I will not press the point, as it makes little part of my argument. In all these twin births there have been two placentæ, with two sets of membranes united side by side, and two cords—one for each fœtus—with distinct placental attachments, and containing the usual blood-vessels. Thus in the case which I have described, the placenta of the imperfect fœtus was about half the size of that of the perfect one, and like it, had membranes attached to its surface, and vessels entering and leaving its substance,—the cords of the two placentæ being several inches asunder.

A twin monster of a similar kind described by Dr. John Clarke, which was voided after the delivery of a healthy child, was enclosed in a distinct bag of membranes, and had a placenta belonging to it, the side of which was attached to the placenta of the healthy child. An anastomosis existed between the vessels of the placentæ. In the case described by Sir Astley Cooper there were, likewise, separate membranes and a separate funis for each fœtus, with umbilical arteries and veins corresponding to each, in number and distribution nearly as usual.

The great point of interest in Sir Astley's case was the discovery and demonstration by injection of the actual vessels by which the anastomoses between the cords of the two fœtuses had been carried on, and which, although known to exist, had not been fully made out by preceding experimenters. These

anastomoses were both arterial and venous,—large branches of the umbilical arteries of the perfect foetus running to join the umbilical artery in the chord of the imperfect foetus, and a still larger branch of the umbilical vein of the imperfect foetus uniting by open mouth with the umbilical vein in the chord of the perfect one, in such a manner that the blood of the two foetuses must have been capable of freely passing from the one foetus to the other, according as the determining influences in the one or the other might preponderate.

The annexed diagram I have sketched to convey an idea of the arrangement of the blood-vessels, and the course of the blood, in twin-foetuses of this kind.



- a. a. a.* The umbilical vein of the perfect foetus arising from its placenta, and running up to the heart.
- b. b.* The heart, represented as consisting of but a single auricle and ventricle, such as is, naturally, somewhat the condition of the organ at this period of life.

- c. c.* The thoracic aorta which may be looked upon, in the diaphragm, as having received the blood conveyed to it by both the aorta and pulmonary artery, from the foramen ovale and ductus arteriosus.
- d. d. d.* The umbilical artery arising from the aorta, and after a spiral course round the vein, dividing at the placenta into two branches,—one large, to be distributed in that organ, the other smaller, viz. :
- e. e.* The branch sent to anastomose with the umbilical artery of the acardiac foetus near the point of its entrance into the corresponding placenta.
- f. f. f.* The umbilical vein of the imperfect foetus arising from its placenta and running thence, to be distributed through all parts of its *acardiac* body, in capillaries, which are represented as being continuous with those constituting the origin of the aorta.
- g.* The branch of anastomosis between the umbilical vein of the imperfect and that of the perfect foetus, near the placentæ.
- h. h.* The aorta, represented as arising from the capillary terminations of the umbilical vein in the body of the acardiac foetus (see p. 351), and giving off, as in the other infant.
- i. i.* The umbilical artery, which after being joined by the branch (*e*) from the umbilical artery of the perfect foetus, terminates with it, in the ordinary manner, in the placenta of the acardiac foetus.

Now, it has been on this discovery of a vascular anastomosis between the vessels in the placentæ that Dr. M. Hall founds his theory of the influence of the heart of the remote foetus in conducting the circulation in its acardiac companion, and it is to this point in particular that I wish to address my observations.

Dr. M. Hall concurs with me in rejecting the explanation offered by Sir Astley Cooper, to the effect that the blood is propelled along the anastomosing branch of the umbilical artery directly to the imperfect foetus, because that would be contrary

to the ordinary course of the current in the arteries of that foetus, and would involve an inversion of the circulation in the placenta. But, still wishing to retain for the heart the character of being the moving agent, he adopts another view of the course in which its energies may be supposed to be directed. He supposes that the stream of blood propelled by the heart through the anastomosing branch discovered by Sir Astley Cooper, meeting that coming along the umbilical artery of the acardiac foetus, carries with it that languid stream by what he terms "a lateral action," forcing it, by the greater velocity of its current, into the capillaries of the placenta, and thence, again, still farther, through the umbilical vein into the body of the monster.*

No objection need be taken to Dr. M. Hall's theory, so far as the simple act of assisting to propel the blood into the placenta goes, farther than its insufficiency, of itself, to that end. But, beyond this point, the influence of even this moiety of the

■ The following is Dr. Marshall Hall's description of this indirect "lateral action" of the heart of the perfect foetus on the circulation in its acardiac twin companion:—

"There may appear to be some difficulty in conceiving how an anastomosis between the umbilical artery of the perfect foetus with that of the imperfect one, can exist without arresting or impeding the flow of blood towards the placenta in the latter. The fact is to be explained, I believe, on the principle of *lateral action*. As a stream of air or of water, passing by other air or water, carries with it the adjacent particles of the latter; and as a stream of air or water passing rapidly along one tube immediately by the orifice of another tube containing a similar fluid, either at rest, or flowing with less rapidity in the same direction, draws the fluid from the latter; so the blood propelled with energy along the umbilical artery of the perfect foetus immediately by a branch anastomosing with that of the imperfect one, will draw by lateral action, the blood contained in the latter into its own more rapid current. The blood in the artery of the imperfect foetus [see diagram, i. i.] is thus drawn by the blood propelled in that of the perfect foetus [d. d. e. e.] *towards and into the placenta*. This effect will also be proportionate to the greater velocity of the blood propelled by the heart of the perfect foetus. Thus, then, in reality, and on two different principles, the blood is propelled to, and attracted from, the imperfect foetus, by the power and action of the heart of the perfect one, and along the customary channels."

heart's power must cease to be directed in a manner calculated to complete the circulation in the imperfect foetus, as suggested by Dr. Hall; for the blood-vessels of the latter come now to be out of the direct line of its influence. I wish here to observe, that my objection is not taken to the capability of the action of the heart of one of the foetuses for driving the blood through the remote body of the other and back again,—for I do not consider that distance alone from the central force would nullify its influence in this respect, so long as the line of continuity of the tubes remains uninterrupted. The circulation in fish, in which there is only a pulmonary heart, and in which the blood goes the round of both the gills and the body from the same central impulse, is easy of comprehension on such a principle; and on this head, I am prepared to receive Dr. M. Hall's experiment on the vessels of the fin of the eel as conclusive. The circulation in the vena portæ, which many consider out of the reach of the heart's stroke, may, likewise, I admit, on the arrangement which I have stated, be promoted by such an influence. The line of the stream from trunks to capillaries, from capillaries to trunks again, and again from trunks to capillaries, and so on, goes round in succession, but it is in one unbroken series, until, arriving at length at the heart, the whole is received into the patulous, non-resisting chambers of that organ. In all these I can concur, even on pure hydraulic principles, but I am obliged to withhold my assent from the application of the same law to the case of the acardiac twin foetus now before us; for, here, the line of vascular continuity is broken in the placenta, by the introduction of a new, diverting force, such as does not exist to interfere with the straightforward progress of the blood in either of the other instances.

It appears to have escaped the consideration of Dr. Hall that the artery of communication from the perfect foetus, on which he lays so much stress, as being capable of propelling by “lateral action” the blood of the imperfect foetus into its placenta, is accompanied by a corresponding vein of even more than propor-

tionate size, which, equally, on the same "principle of lateral action," must bring that blood back again in the same direction. The suction power of the heart,* no matter how feeble it be, will attract to itself the blood received into the capillaries of any veins within the range of its influence, rather than permit it to flow off in a new direction for the development and growth of another and distinct being, more especially if the blood-vessels of that being be not, as Dr. Hall's hypothesis teaches, endowed with any innate power of attraction for that fluid. The perfect foetus would thus, by its heart, take to itself, back again, all the disposable blood within its reach, and thereby become the instrument of depriving its acardiac twin companion of its supply, rather than of adding to its store.

The existence of this great vein, in such a situation, is fatal to Dr. Hall's theory. If *it* were not present then, indeed, there would be no other course for the blood arising out of the placenta, but that along the umbilical vein of the cord into the

* The following extract from Dr. Bayly's admirable Translation of Müller's Physiology, vol. i. p. 245, second edition, may serve as an illustration of what may, for want of a better name, be termed "the suction power" of the heart.

"During the dilatation of the auricles the distention of the veins diminishes. This was observed by Magendie and Wedemeyer, and I have myself witnessed it in the dog. A knowledge of this fact is necessary in forming an opinion on the following experiments:—Wedemeyer and Guenther, having tied the jugular vein in a horse, made an opening into it between the ligature and the heart, and introduced a catheter, to which a bent glass tube had been cemented. The longer descending branch of the tube (two feet in length) was placed in a glass filled with water. At first the inspirations and the contractions of the heart were nearly simultaneous and of the same frequency,—namely, thirty in a minute,—and the coloured water rose suddenly two or more inches in the tube at the moment of each inspiration and pulsation of the heart, and sank again each time to its former level. The inspirations gradually became twice as frequent as the pulsations of the heart; and Wedemeyer and Guenther now observed for a long period, that the rise of the fluid did not take place at each inspiration, but at every beat of the heart, and consequently simultaneously with each dilatation of the auricle. This experiment seems to prove beyond a doubt that the heart exerts a power of suction."

body of the acardiac foetus, and the circulation would be, in such event, analogous to that in the vena portæ, or in the blood-vessels of the fin of the eel ; but, whilst there, it must, on the hydraulic principles laid down by Dr. Hall, perform a function setting at nought the power of the distant heart over the blood circulating in the branches of the umbilical vein in the body of the acardiac foetus. In fact, the existence of the circulation in this acardiac twin, in spite of such a drawback upon its fulfilment, appears suited more as an argument in favour of my theory of independent vascular action, than of that of Dr. Hall, which attributes the whole, *exclusively*, to remote cardiac influence.

Now, I wish it to be understood that this argument is founded on the supposition that the anastomosing branch, from the umbilical artery of the perfect foetus, joins the *trunk* of that of the imperfect one *before* its subdivision into the branches which ramify in the lesser placenta, as the most favourable condition for the fulfilment of the circulation by the influence of the heart of the remote foetus ; for, if that anastomosing branch joined only one of its minor subdivisions (and it was against the possibility of the successful exertion of the remote heart on the circulation in the monster under the latter circumstances that I argued in my former communication, when I spoke of the improbability of its “ driving the fractional surplus of its blood, with all the rest belonging to the placenta of the monster, not only into that monster, but out of it again”), I say, under such an arrangement, the probability that so important a function as that of supplying with blood the entire body of a human foetus in the manner suggested by Dr. Hall would be infinitely lessened.

Dr. Hall’s description of the manner in which he supposes that the heart of the perfect foetus carries the blood through the anastomosing branch of the umbilical artery, and propels with it, “ on the principle of lateral action,” the whole of the blood of the imperfect foetus into the placenta, may, in his own clear

words,* be equally applied to its influence on that in the anastomosing branch of the vein. Let us see how his theory will then come out, substituting the word *vein* for *artery*, and tracing the blood *out of* the placenta of the abnormal foetus, instead of *into* that organ, as followed by him. "As a stream of air or water passing by other air or water carries with it the adjacent particles of the latter, and as a stream of air or water passing rapidly along one tube immediately by the orifice of another tube containing a similar fluid either at rest or flowing with less rapidity in the same direction, draws the fluid from the latter; so, the blood drawn with energy along the umbilical vein of the perfect foetus (see diagram, *a. a.*), immediately by a branch anastomosing with that of the imperfect one (*g.*) will draw by "lateral action" the blood contained in the latter, into its own more rapid current. The blood in the vein of the imperfect placenta (*f. f.*) is thus drawn by the blood attracted in that of the perfect foetus (*a. a.*) towards and into the heart. This effect will also be proportionate to the greater velocity of the blood attracted by the heart of the perfect foetus. Thus, then, in reality, and on two different principles, the blood of the placenta of the imperfect foetus will be attracted to the perfect foetus by the power and action of its heart and along the customary channels."

Now, this view of the case cannot be objected to even by Dr. Hall himself, for if the circulation be conducted on mechanical principles, the same laws which regulate it in one stage of its progress, as interpreted by him, must be equally applicable to it in another. Nor, perhaps, could a better exemplification be given of the insufficiency of pure hydraulics to the explanation of the phenomena of the circulation than the predicament in which such a line of argument places the question before us. For, if such were the rule here, the passive acardiac foetus would be absolutely drained of every drop of its blood by the

* See foot-note, p. 342.

mechanical power and action of the heart of its more highly favoured companion *in utero*.

As bearing out his views on this subject, by proving "that the action of the heart of one foetus does sometimes extend to the umbilical cord of a second foetus," Dr. Hall quotes a case from Lallemand of a *pulsating* hæmorrhage from the placental end of the cord of the first born of twin foetuses before the birth of the second. I may add, before commenting on this occurrence, that such instances are so far from being unusual, that the common practice of tying the placental end of the cord has been adopted, I believe, in anticipation of the possibility of hæmorrhage, should the birth turn out to be one of twins. Be this, however, as it may, I consider that this and similar cases, instead of confirming Dr. Hall's theory, rather weaken its foundation; inasmuch as the occasional occurrence of such anastomoses in natural twin cases—cases in which the foetuses, with their respective cords, placenta, and hearts, attain full perfection, shows such communication between the vessels to be, of itself, a matter of very little moment, either one way or the other; and takes away half the argument for the supposed all-important value of the anastomosis in acardiac foetuses, by demonstrating its presence in cases where no such use for it can be supposed to exist.

Considerations such as these occurred to me when this very mode of accounting for the circulation suggested itself to my mind at the time of writing my former essay, and refuting the somewhat similar theory of Sir Astley Cooper on the subject. They are the same which led me to say, that "it must therefore appear evident that the *vis a tergo* imparted by the heart of the perfect twin cannot be the *sole* moving cause of the circulation in its abnormal companion;" and in another place, that "in thus questioning the power of the heart as being solely instrumental in accomplishing the transmission of the fluids through the body of the foetus, I am not prepared with any new expla-

nation likely to account for the phenomenon. The theory of 'vital attractions and repulsions,' although conveyed in terms which may be considered more as expressive of the facts, than as explanatory of them, appears to me to approximate more nearly to the true one than any which has been yet broached." Such were my conclusions formerly: they were more *negative* as to the heart, than *positive* as to the blood-vessels, and as such I must still leave them,—unweakened, I believe, by any arguments or facts adduced by Dr. Marshall Hall.

To a call on the part of Dr. M. Hall for "farther evidence" of acardiac circulation in "lower animals," I may reply that the currents of red blood in the arteries and veins of certain worms, such as the leech, earthworm, &c., in which they can even be seen with the naked eye; the well-arranged vascular apparatus of both the larva and perfect insect of certain neuropteræ, as the dragon fly; the almost equally simple arrangement of the arteries and veins of the arachnidæ; the fluid-conducting tubes of the diplozoon paradoxum; and, I may add, the perfect circulating systems of plants,—all carried on in the most systematic and efficient manner, without assistance from any heart-like agency whatsoever, afford examples of innate vital powers in the circulating vessels, disproving the accuracy of the assertion of Dr. Hall, "that we are destitute of all proof that these vessels themselves have any such power."

Moreover, phenomena present themselves daily to our view in the course of both physiological and pathological investigations, leading to the same conclusions.

The blood deserts the umbilical cord of the foetus as soon as the connexion between the placenta and the womb ceases, not because the heart of the foetus beats with less force after birth than before, for the contrary is the fact, and not because the heart's impulse in the direction of the lower part of the body is lessened, since the blood is well supplied to the inferior extremities: so little indeed of a mechanical nature is there in this

phenomenon, that if the cord be left untied and undivided for a little time after the separation of the placenta from the womb, the flow of the blood will become slower by degrees, and cease altogether in the end, and that even before the function of respiration has been established. The absence of hæmorrhage from the vessels of the umbilical cord in animals, which by instinct know this connecting link across on the instant of the birth of their offspring, is a beautiful illustration of this point.

When a large branch of an artery happens to be wounded near the point of its origin from another branch of equal magnitude, a portion of the blood still continues to flow into that which has escaped injury, and to be conveyed into the capillaries, beyond the seat of the wound,—a salutary phenomenon, due obviously, in part, at least, to the existence of a vital attraction between the remote part and the blood, and not exclusively to the force of the heart, the effect of which, under these circumstances, would be, on pure mechanical principles, to drive all the blood out of the wound thus made, rather than to propel it onwards through the limb, against the numerous collateral mechanical and vital resistances to which it must necessarily be there subjected. And, on the same principle, the application of a ligature on the main artery of a limb,—say on the femoral, for the cure of an aneurism of the popliteal artery,—instead of stopping the supply of blood by cutting off the direct influence of the heart, is followed by an unwonted and vigorous effort on the part of the capillaries to attract sufficient blood into the member to carry out the purposes of life and nutrition, as is evidenced by that feeling of tension and glow of heat, sufficient in many instances to call for artificial cooling to suppress it, which almost invariably, after a longer or shorter interval, develops itself.

As an illustration of a similar principle in operation even in the vegetable kingdom, may be mentioned the fact, that after the cutting off of a branch of a tree, the part projecting beyond

the last branch furnished by it dies and shrivels up, exhibiting a spontaneous arrest of circulation beyond the point where the attraction of vitality had ceased to invite the fluids.

But of all the illustrations of this matter, that of the sudden cessation of the circulation in the blood-vessels of the feet in mortification, while the vessels of the part continued free from coagula of blood or other mechanical obstruction, mentioned in my former essay, appears to me among the most conclusive.

The filling of the vessels of the cheek in the act of blushing, the enlargement of those of the uterus during pregnancy, and of those of the horns of the stag in their season of growth, are all likewise familiar illustrations of the powers possessed by the blood-vessels, in modifying, if not in conducting, an almost independent action of circulation.

The state of a part, in regard of temperature, influences too very considerably the degree of plenitude of the blood-vessels. When the hand is cold its blood-vessels are empty, and their pulsations feeble; but on exposure to heat these conditions undergo a complete change; the vessels fill up, and the pulse beats strongly, and that without receiving any new or additional impetus from the heart.

If the force of the heart alone drove the blood into those erectile and other tumours which bleed so profusely when touched or injured, one should be obliged to apply numerous ligatures after removing them with the knife; and yet every surgeon knows that, if the incisions be made in the sound parts at a little distance, the use even of the ordinary means of stopping the blood is scarcely called for.

And, lastly, I may allude to recent experiments and investigations on the subject of asphyxia from inhalation of noxious and poisonous gases, which have proved beyond all doubt that it is in a deranged action of the capillary vessels of the lungs that obstruction to the circulation in these cases commences,—an obstruction which the whole force of the heart is unable to over-

come, and which only gives way when the capillaries have been restored to their natural condition.

Dr. Hall marvels at my not being able to account for the phenomena of the placental soufflet in connexion with the circulation of the blood in that organ, and gives an extract from Barth and Roger explanatory of its nature,—making use of the circumstance, at the same time, as an argument against the general accuracy of my conclusions. To all this I need only say that there has long been much uncertainty regarding the cause of the placental soufflet, and that the work containing the extract alluded to was not written at the time of the publication of my essay.

Another point in my essay, from which Dr. M. Hall finds occasion for dissent, is one having reference to the *course* of the blood in the vessels of the acardiac foetus; and here I would observe *in limine*, and it is not a little strange, that his own theory on this head is not—what he supposes it to be—different from mine. He objects to my position that “the circulation in the vessels of the foetus is inverted,” viz. that the blood enters the body, and is distributed through its several parts by the umbilical vein and its branches, to be brought back again, therefrom, by the aorta, the origins of which are derived directly by inosculation from the capillary terminations of that vein, and yet he says that “the blood passes through the capillaries of the placenta into the umbilical vein, and through the umbilical vein and a series of capillaries (in the monster of course) to the aorta, and *not* according to the views of Doctor Houston, in an inverted direction.” Verily, this is a puzzle; a distinction without a difference; or, in Dr. M. Hall’s own words, “a most extraordinary statement.” For if the blood, no matter how propelled, passes, as agreed upon mutually between us, through the umbilical vein into the body of the acardiac foetus, and that it finds, there, no heart, and consequently no cross-channels, such as a *foramen ovale* and *ductus arteriosus*

would offer, by which to be transferred from the venous to the arterial side of the circulatory apparatus, it has no other course left for it but that "through the umbilical vein and a series of capillaries to the aorta," and therefore "*according* to the views of Dr. Houston, in an inverted direction." The possibility of this inversion I took some pains, in my former essay, to show that Nature had provided for, by leaving all the veins of the body without valves,—thereby removing the only difficulty which lay between Physiologists and the adoption of this view of the subject. I mentioned also a fact discovered in the examination of my case, which appeared to me to set the question as to the course of the blood in the umbilical vein at rest, namely, a remarkable dilatation of the placental end of that vein, the result of the presence of a tumour incidentally developed in the substance of the cord, and which indicated that the course of the blood had been in the direction of this tumour, and consequently from the placenta towards the foetus.

Dr. Hall further objects to the theory of the inversion of the circulation in the capillaries of the body of the foetus, and the consequent fulfilment by veins of a function usually performed by arteries, and *vice versâ*, on account of its "improbability." But even of this we have an analogue in this very umbilical vein itself. Before birth it is, in all cases, the great artery (if I may so call it) of the liver, nourishing its substance, modelling its form, and imparting to it that superiority in size over all the organs in the body for which it is distinguished. By far the greater portion of the blood brought by this vein to the organ is distributed in its substance as if from an artery, for not more than a third of it passes directly on by the ductus venosus to the heart. Here then is a vein performing a discerning function in the fullest sense of the word; and the theory of the same vein, or a continuous substitute for it in the absence of the liver (for one of the great peculiarities of this foetus was the absence of this viscus), doing the same office, with the same

blood, for the other organs of the body to which its valveless ramifications are throughout distributed, is not to be rejected on account of its "improbability;" more especially as there is no alternative but to adopt it,—no other possible explanation by which the fact can be accounted for.

In reply to an objection urged by Dr. Hall to my using as an argument the well-known fact, that the blood-vessels of the early fœtus appear before the heart, on the ground "that of the *nisus formativus* and its modes of operation we literally know nothing," I may say, that while I admit the truth of the allegation, I must not concur in the inference which he draws, "that we cannot, therefore, reason from its phenomena." Because, although by such a mode of reasoning we may not always be able to ascertain what *are* the exact causes of certain phenomena, we may sometimes, nevertheless, acquire thereby such information, as will, at least, teach us what are *not*, and thereby advance a step towards a knowledge of the real causes. If one finds, for example, that during the development of the chick in ovo the "*nisus formativus*" constructs the blood-vessels before the heart, and that even before the appearance of this organ a movement of the blood is discernible in the vessels, the inference that the heart is *not* the cause of this movement, at this period of existence, is obvious and conclusive. And if one finds in an inquiry respecting the cause of the circulation in a twin acardiac fœtus that the action of a remote heart with a certain co-existing arrangement of vessels would, on pure hydraulic principles, tend rather to empty than to fill the vessels destined to carry the blood into the body of the imperfect fœtus, the legitimate inference is, that such heart cannot be the *sole* moving power in carrying on the circulation; and we are thereby relieved from the disadvantage of resting satisfied in error, and led to seek, if not for some new, at least for some additional cause of the phenomenon.

What this new or additional cause may be is, I think, the only question. Professor Alison has employed the terms "vital

attractions and repulsions" as expressive of the existence of some inscrutable principle, the attribute and effect of vitality in the capillaries, and perhaps, also, in the blood itself, by which that fluid is made to circulate in the body, and which he considers capable of effecting this object, under certain circumstances and certain conditions of existence, even independent of the action of a heart. Dr. Graves and Dr. Carpenter consider the case published by me, with the arguments deduced from it, as conclusive of such a power in the human being; but Dr. Marshall Hall, desirous of attributing all to the heart itself, persists in his original opinion, and censures these gentlemen for their credulity. "The facts," however, as deducible from cases such as these, and from the other considerations which I have detailed, "still remain, notwithstanding Dr. Hall's assertion to the contrary, that the heart is *not* the sole agent by which the blood is circulated through the body, and that we have good evidence for the belief that the blood-vessels themselves *are* possessed of a considerable, although hitherto unexplained power to that effect." The farther application of such views to explain the nature of inflammation cannot, therefore, as Dr. Hall says, in allusion to Dr. Graves's and Dr. Carpenter's use of my researches, be regarded "as a still farther deviation from true philosophy."

Before quitting this subject I beg to state that it is my intention not to engage in any farther controversy regarding it. What I have here written has been, solely, in defence of my original statements—to save them from that disrepute which a submission to the condemnation of so distinguished a Physiologist as Dr. Marshall Hall would necessarily throw them into. Dr. Hall's opinions and mine regarding the *course* of the currents of the blood in acardiac foetuses, it now appears, correspond; and I shall rejoice when the *final cause* of such circulation comes to be so well known and understood that on this head, likewise, there shall cease to be any difference between us.

ART. XI.—*On Conical Cornea*. By JAMES H. PICKFORD, M.D.,
Licentiate of the King and Queen's College of Physicians
in Ireland; Corresponding Member of the Association of
the King and Queen's College of Physicians.

[Read at a Meeting of the Association, Aug. 7, 1843.]

THERE is probably no disease to which the eye is subject, hitherto so rebellious to medicine, so intractable in its nature, and, at the same time, so fatal to vision, as conical cornea; and not one, the pathology and treatment of which are so little understood.*

In the following pages, after enumerating a few of the more prominent symptoms of the disease, I shall request the attention of the Association,

1st. To the generally received opinions of the nature of the malady.

2ndly. To the treatment recommended by writers on the subject.

3rdly. To a more successful mode of treatment.

4thly. To an attempt to explain the rationale of such treatment, by a reference to the anatomical structure of the part affected, and to the probable pathology of the disease.

The attention of the Profession was first directed to conical cornea by Levéillé, the French translator of Scarpa on the Diseases of the Eye, in a note under the head of Staphyloma. His description of the disease is so exceedingly accurate that I am induced to quote his own words:

■ “ We must, I believe, confess at last, that we do not understand the pathology of conical cornea, that its causes are totally obscure, and that we know no treatment capable of remedying it.” “ I cannot say that I have seen any plan productive of benefit.”—*A Treatise on the Diseases of the Eye*, by W. Lawrence, F. R. S.; page 379. London, 1833.

“ From the result of my practice, I much fear, that *conical formed cornea* may be ranked with the incurable maladies.”—*An Essay on Staphyloma pellucidum conicum*, by Robert Lyall, *Edinburgh Med. and Surg. Journal*, vol. vii. p. 11, 1811.

“ Il m’est arrivé naguère, d’observer une singulière maladie de la cornée; je ne saurais trop dans quelle classe de maladie des yeux la ranger, si l’on ne peut la rapporter au staphylôme. Chez une dame de trente cinq ans, ayant les deux yeux naturellement saillans, saine d’ailleurs, le centre de la cornée des deux yeux se souleva graduellement, au point que cette membrane ne formait plus, comme à l’ordinaire, un segment regulier de sphère, mais un cône notablement saillant, et terminé en pointe dans son milieu. La cornée de chaque œil, regardée de côté, semblait un petit entonnoir transparent, dont la pointe était tournée en dehors. Dans certaines positions de l’œil, il semblait que la pointe du cône fût un peu moins transparente que le reste de la cornée; dans d’autres, ce qui était nébuleux, l’était si peu, qu’il ne pouvait faire un obstacle notable à la vision. En plaçant l’œil directement contre une fenêtre, ce point saillant du centre de la cornée, plutôt que de transmettre la lumière, la réfléchissait avec une telle force, qu’elle semblait étincelante; et comme ce phénomène avait lieu précisément contre la pupille, il en resultait, qu’étant rétrécie dans un grand jour, elle ne permettait à la malade que de distinguer confusément les objets.”*

Neither sex nor age is exempt from this disease; females, however, appear to be for the most part its subjects. Mr. Wardrop† has seen it in a boy 6 years old, and Sir William Adams‡ met with it in a person upwards of 70 years of age, though the middle period of life is that in which it chiefly makes its invasion. It is sometimes congenital.§

* *Traité Pratique des Maladies des Yeux, traduit de l’Italien de Scarpa, par J. B. F. Levéillé, tom. ii. p. 179. Paris, 1802.*

† *Essays on the Morbid Anatomy of the Human Eye, by James Wardrop, vol. i. p. 117. Edinburgh, 1808.*

‡ *Journal of Science and the Arts, vol. ii. p. 402. London, 1817.*

§ *Manuel Pratique d’Ophthalmologie, par Prof. Stœber, Strasbourg, 1834.*

Professor von Ammon says, congenital *Hyperkeratosis*, or *Ochlodes*, a term which he prefers, is accompanied by a peculiar conformation of the cranium, and that he has met with this in several children of one family.

“ Beachtungswerth ist es, dass auch bei dieser *Hyperkeratosis congenita* eine

Conical cornea, "*staphyloma pellucidum*," is a somewhat rare disease, though Demours states that he and his father, who had observed it as far back as 1747, have notes in their case-books (*journaux*) of upwards of a hundred cases.* Beer, however, is silent on the subject, as are most of the German writers.

Mr. Wardrop,† in his *Essays on Morbid Anatomy*, gives an elaborate account of the disease, which he names *conical formed cornea*.

Mr. Lyall‡ enters into a lengthened description of the malady in an essay in the *Edinburgh Medical and Surgical Journal*, and in his inaugural thesis published at Petersburg in 1816. He calls the disease *staphyloma conicum pellucidum*.

Dr. G. E. Wimmer, in his *Thesis de Hyperceratosi*, printed at Leipzig, 1831, enters most fully into the history of the disease and the published statements respecting it.

Professor Himly of Göttingen has collected every thing known on the subject, and transferred it to the pages of his *Bibliothek für Ophthalmologie*.§

In the disease under consideration the normal convexity of the cornea is lost; a transparent conical structure, apparently differing in no particular from the natural texture of the cornea, unpreceded and unattended by pain or inflammation, supplies its place; the cornea is prolonged forwards, and presents to the observer a peculiar dazzling, sparkling point of brilliancy, ■ dew-drop, or gem-like radiance, as though ■ piece of solid crystal were embedded in its centre.

eigenthümliche Form des Schädels, nämlich ein sogenannter Spitzkopf sich vorfindet. Ich habe dieses schon Einmal bei mehrern Geschwistern beobachtet, die sämmtlich eine angeborne Hyperkeratosis tragen."—Dr. Friedrich August v. Ammon's *Zeitschrift für die Ophthalmologie*, vol. i. p. 123. Dresden, 1830.

* *Traité des Maladies des Yeux*, par A. P. Demours, tom. i. p. 316. Paris, 1818.

† *Op. cit.*

‡ *Op. cit.*

§ *Bibliothek für Ophthalmologie, Kenntniss und Behandlung der Sinne überhaupt in ihren gesunden und kranken Zustände*. Vol. i. Hannov. 1816.

This appearance is occasioned by the excessive refraction, by the corneal cone, of such rays of light as pass through it, together with the reflexion, in due relation to the incident angle, of a certain portion of all rays impinging upon its surface.

In extreme cases it is not unusual to find the apex of the cone opaque. This may arise from inflammatory action, occasioned by the friction of the lids upon the corneal projection, or by other causes, to which an eye of this peculiar form must be subjected.

Should this inflammatory condition be excessive, ulceration and staphyloma may be the consequence. Demours says, "*La protubérance augmente dans quelques cas rares, se montre accompagnée d'ophthalmie, et sort de cette classe particulière, pour entrer dans le nombre immense des staphylômes de la cornée.*"*

Patients, when first attacked, become myopic, but, as the disease increases, are unable to distinguish small objects, even in the direction of the axis of the eye, unless held within an inch or so of the cornea. All direct and useful vision is now, nearly, if not totally, intercepted, though, on the temporal side of the eye, even minute objects are easily discerned. This will hereafter be rendered apparent, by the projection of an eye of a patient now under my care at the Sussex and Brighton Infirmary for Diseases of the Eye.

When the disease is far advanced, patients most frequently complain of observing a circle, or circle of annuli, around a lighted candle or lamp, as in the annexed engraving, greater or less, according to the more or less perfect development of the disease.

I have seldom, however, met with any one so affected (and my experience in this somewhat uncommon disease is not very limited), who complained of the candle or other luminous body appearing to be multiplied four, five, or more times, though this

* *Op. cit.* p. 316.

is mentioned by authors, and attributed by Sir David Brewster to the irregularities of the corneal cone, the surface of which he has invariably found to present numerous small "spherical elevations and depressions, sufficiently accounting (in his opinion) for the broken and multiplied images of luminous objects."*

These irregularities, or small spherical elevations, will, however, equally well explain the chain-like appearance of the circle above-mentioned; each elevation being, in fact, a small cone, so that the vertex of the obtuse corneal cone may be said to consist of a series or congregation of minute cones, irregularly clustered together, appreciable only by aid of a powerful lens, or by observation of the changes produced upon the image of a lighted taper made to traverse its surface.

I.—*With regard to the generally received opinions of the nature of the malady.*

Some writers are of opinion that the conical appearance assumed by the cornea consists in a deposit, upon its external surface, of translucent matter, of the same character as the cornea itself.† This opinion is shown to be erroneous by Professor Jäeger‡ and Mr. Middlemore, the former of whom found, upon examining after death the cornea of a person who had been the subject of this disease, a central depression, the size of a mode-

* *Essays on the Morbid Anatomy of the Human Eye*, by James Wardrop, vol. i. p. 121. Edinburgh, 1808.

† Sir William Adams—*Journal of Science and the Arts*, vol. ii. p. 403. London, 1817.

‡ "Als man die Cornea zwischen die Finger nahm, bemerkte man deutlich eine Vertiefung in der Mitte, die von einem dicken Wulst umgeben war. Man schnitt nun die Cornea in der Mitte durch, und fand das mittlere Drittheil derselben, 3mal dünner als gewöhnlich, ähnlich einem Postpapiere und die zwei äussern Drittheil bedeutend verdickt und zwar deutlich in den mittleren Lamellen, die äusserste und innerste nicht, die mittlere Substanz ist homogen. Die Verdickung des äussern Theiles verliert sich allmählig in die Verdünnung, so dass der Durchmesser der letztern die Grösse einer mässig erweiterten Pupille hat."—*Resultate der anatomischen Untersuchung zweier mit Hyperkeratosis behafteter Augen*, von Herrn Prof. Dr. Jäeger in Erlangen, in *Ammon's Zeitschrift*, vol. i. p. 548. Dresden, 1830.

rately dilated pupil, about the substance of writing paper, with a marginal thickening, which gradually increased towards the sclerotic.

Mr. Middlemore says, "I have had one opportunity of examining, after death, the state of the cornea in a person who was affected with conical cornea in an extreme degree, and in that instance its laminae were less moveable upon each other, its circumference was of a natural and ordinary degree of thickness, but its apex was much thinner than usual, and rendered opaque on its exterior only, for its neural surface, even at the apex, was perfectly transparent; in other respects it did not appear to have undergone any change, unless I mention that alteration in the evenness and equality of its surface discovered by Dr. Brewster, but which was not visible to the naked eye."*

In corroboration of these statements I may adduce the case of a gentleman, the subject of this disease, mentioned by Mr. Wardrop,† in whom the cornea burst from a blow received upon the eye.

Some believe that the aqueous humour, being secreted in greater quantity than usual, distending the chambers, has the power of thrusting forward, as it were, the centre of the cornea, by a slow degree of stretching.‡

I would ask, were this last hypothesis correct, why should the cornea assume a conical form? It is easy to understand how increase of the aqueous humour may distend, attenuate, and inflame the cornea, and enlarge its diameter, dilate the pupil, and impair the mobility of the iris; occasion a sense of fullness and tension in the eye, and give rise to headach or circumorbital pain, none of which symptoms, however, attend conical cornea; but it is not so easy to comprehend why it should tend to the

* *Treatise on the Diseases of the Eye and its Appendages*, by Richard Middlemore, M. R. C. S., vol. i. p. 532, *note*. London, 1835.

† *Op. cit.*

‡ Mr. Lyall, *Op. cit.* pp. 10, 11.

formation of a cone. Mr. Lyall, on the contrary, “thinks the question may be easily answered, since Mr. Everard Home, in the *Philosophical Transactions*, informs us, that ‘in stretching the cornea, the central part yields most readily to the power applied.’—*Cæteris paribus*, then it follows, that the cornea must assume a conical form, when it yields in consequence of distention internally.”*

Mr. Travers† considers the disease to consist in “a process of thinning, or an absorption of the interlamellar texture of the cornea,” “in consequence of which it loses its natural tonic resistance to the pressure of the contents of the globe.”‡ “The disease,” says Mr. Travers, “is sometimes slow, occupying months, and even years; and, on the contrary, I have seen it produced in its greatest extent in the short space of eight weeks.” “If left to itself,” however, “the cornea does not give way, but remains in the condition described.” Were Mr. Travers’ pathology correct, I contend that it *ought* to and *would* give way. He adds, that “no remedy yet proposed has been followed by a beneficial result.” Mr. Travers is the only writer with whom I am acquainted who ascribes the disease to a constitutional origin, and who recommends constitutional treatment. He “has found steel and arsenic decidedly serviceable.” To these he conjoins “cold bathing, and the practice of often opening the eyes in cold spring water.”§

Others attribute the disease “to some faulty action of the nutrient vessels.”|| Possibly with much more of reason and probability might we say, as I shall endeavour hereafter to show,

* Mr. Lyall, *op. cit.* p. 11.

† *Synopsis of Diseases of the Eye*, by Benj. Travers, F. R. S. Second edition. p. 124. London, 1821.

‡ Dr. Littell, of Philadelphia, entertains similar opinions—*A Manual of the Diseases of the Eye*, by S. Littell, M. D., revised and enlarged by Hugh Houston, p. 149. London, 1840.

§ *Op. cit.* p. 292.

|| *A practical Treatise on Diseases of the Eye*, by William Mackenzie, M. D. Second edition, p. 625. London, 1835.

that it depends upon some faulty action of the absorbent vessels and nutrient capillaries of the cornea itself, induced by the debility of the nerves of the part. Indeed, if Jæger's and Middlemore's accounts prove, on further investigation, to be uniformly correct, this is the only explanation which can be given with our present limited knowledge of the pathology of this singular disease.

On the other hand, if the disease be found to depend on increased deposit merely, we must admit the supposition of "a faulty action of the nutrient vessels."

II.—*With regard to the treatment recommended by writers on the subject.*

What has been said of the pathology applies with equal justice to the treatment of this disease. All writers are agreed that nothing is known either of the one or the other. Various remedies, both general and local, have been prescribed for its cure or relief; all have failed, even in arresting its progress.*

Some practitioners recommend the application, once a week, of a leech or two, to the lower eyelid or temple. Others advise bleeding, frequent cupping, issues to the temples, perpetual blisters and astringent collyria; some one thing, some another.

Some writers, believing it to depend upon an excess of aqueous humour, the consequence of a dropsical tendency, have administered "calomel, &c., internally, with a view to excite the action of the absorbent system, and thus remove the increased quantity of aqueous humour from the anterior chamber, but without the least success."†

Others have evacuated this fluid, unmindful of its exceedingly rapid renewal: for, so soon as the puncture is sufficiently

* The late Mr. Tyrrell, however, says, "that in the early stage of the alteration," he "believes that it may be retarded, if not prevented from further increase, by the local use of stimuli; but" he has "never known any diminution occur."—*A practical Work on the Diseases of the Eye, and their Treatment*, By Frederick Tyrrell, vol. i. p. 276. London, 1840.

† Mr. Lyall, *op. cit.* pp. 12, 13.

healed to bear its pressure, so soon will the chambers be filled with the fluid as before the operation.* No permanent relief of any ind, neither benefit to vision, nor mitigation of the disease, can therefore arise from so inconsiderate a mode of treatment.

There are others who recommend constant and well directed pressure on the apex of the corneal cone. The futility, not to say mischief, of this unscientific plan is self apparent. It is replete with objections, exclusive of the utter hopelessness of its effecting a cure. Its advocates expect to occasion, by these means, absorption of the apex of the cone, and, ultimately, of the whole of the transformed cornea. If Jäeger's account be proved to be correct, and if the apex of the cone be, as he states, not thicker than "writing paper," what must be the state of the patient's eye after it had been subjected to pressure, sufficiently long to answer the proposed end? Would not the remedy here be infinitely worse than the disease?

Some writers, satisfied, after the most ample experience, of the insufficiency of remedies, content themselves with doing nothing: "*Lorsque je suis consulté,*" says Demours, "*pour cette lésion, je conseille de n'y rien faire de particulier.*"†

Sir William Adams broke up the crystalline lens, in order, as he states, that the rays of light might fall upon the retina, and not be brought, by the increased refractive power of the cornea and lens, to a point far short of the sentient apparatus of the organ of vision.

Sir John F. W. Herschel, speaking of "short-sighted persons," says, "they have their eyes too convex, and this defect is remediable by the use of proper lenses;" and he then refers to the operation under consideration in the following terms:—"There are cases, however, though rare, in which the cornea becomes so very prominent as to render it impossible to apply conveniently a lens sufficiently concave to counteract its action. Such cases would be accompanied with irremediable blindness,

* Mr. Lyall and Mr. Gibson, *op. cit.* pp. 10, 11. Mr. Lawrence, *op. cit.*

† *Op. cit.* tom. i. p. 316.

but for that happy boldness justifiable only by the certainty of our knowledge of the true nature and laws of vision, which, in such a case, has suggested the opening of the eye and removal of the crystalline lens, though in a perfectly sound state.”*

Sir John proposes to remedy the defective vision arising from malconformations of the cornea, “by adapting a lens to the eye, of nearly the same refractive power, and having its surface next the eye an exact *intaglio* fac-simile of the irregular cornea.”† “Should,” says he, “any very bad cases of irregular cornea be found, it is worthy of consideration, whether at least a temporary distinct vision could not be procured, by applying in contact with the surface of the eye some transparent animal jelly contained in a spherical capsule of glass; or, whether an actual mould of the cornea might not be taken, and impressed on some transparent medium. The operation would of course be delicate, but certainly less so than that of cutting open a living eye, and taking out its contents.”‡

Entertaining the highest possible respect for the opinion of so eminent an authority as Sir John Herschel, and for the talent and labours of Sir William Adams, I must be permitted to question the “happiness” of that “boldness” which has suggested the removal of the crystalline lens as a remedy for the depraved vision of those afflicted with the disease under consideration.

The circumstance, alone, of the operation having fallen into disuse is, in itself, sufficiently condemnatory of its supposed utility.§ Could but the rays of light, with accustomed regularity of convergence, reach the lens, all would be well; a deep double concave glass, by occasioning a prior divergence, would remedy the defect of vision; but, could they do this, one of the

* Article “LIGHT,” *Encyclopædia Metropolitana*, p. 398, § 358.

† *Ibid.* p. 398, § 359.

‡ *Ibid.* p. 398, note.

§ “I should not think of proposing any such operation, unless the affection had gone so far as to make the eye useless, and I should then expect no good from it. The proceeding has not been employed with advantage in any instance.”—Mr. W. Lawrence, *op. cit.* p. 379.

very peculiarities of the disease itself would vanish, and cease to exist ; for, were the refractive powers of the cornea merely “increased,” and not in excess, all rays entering it would pass on-wards to the lens and retina, without producing that peculiar sparkling, luminous appearance, that diamond-like radiance before mentioned ; one of the essential characteristics of the disease.

The removal of the lens from the axis of vision cannot, I contend, produce any effect upon the corneal cone ; for this it is which refracts unduly, and in excess, the rays of light falling upon the upper portion of its surface, and offers a permanent barrier to their reaching the lens with their ordinary convergence and regularity.

How far I am justified in arriving at this conclusion will be seen by a reference to the annexed diagram of the eye of Alfred Adams, æt. 17, a patient under my care at the Sussex and Brighton Infirmary for Diseases of the Eye.*

The left eye, of the profile of which I made an accurate outline, and of which the following is a magnified view, has been affected with the disease for the last two years. I found, upon admeasurement, that the sides of the cone subtended an angle of 92° . The patient, on being desired to look steadily in his

* This individual is already so much improved, though he has been under treatment but a comparatively short time, that, with some little difficulty, he can read even small print. Upon looking at his brother's nose, at a distance of five feet, he can now see the whole of his face, and objects on either side. The circle of annuli is no longer present, its place being supplied by two concentric circles of minute but innumerable flames (incomplete, however, at their upper parts), having a diameter of twelve inches only. The moon appears surrounded by two concentric circles of satellites, also incomplete at their upper parts. The image of the flame now appears perfect when the rays of light are incident to the sides of the corneal cone at an angle exceeding 25° . The apex of the cone has been perceptibly rounded off.

It is exceedingly interesting to mark from time to time, during the treatment, the slow but progressive changes which the diseased cornea undergoes towards a restoration to its normal figure. From repeated observations which I have made,

brother's face, at a distance of about eighteen inches, and to fix his eye upon the point of his nose, said, he could only see this and the mouth. Whilst, on the temporal side, the field of vision being evidently much increased, he saw my hand distinctly, at a right angle with the axis of his own eye. Over the nose, and inferiorly, vision was, of course, more limited, but equally distinct. Through a hole, made with a needle in a card, he was enabled to read very small print. Upon looking at the flame of a candle in a darkened room, he saw, at the distance of about twelve feet, a circle of rings, as described before, and which he figured on paper, having a diameter of about eighteen inches. This circle disappeared altogether when the candle was so placed that the rays of light fell upon the temporal side of the cone at an angle with its axis exceeding 30° . Upon approaching to within two feet of the candle it appeared to be "a ball of fire, about the size of a cricket ball."

It must be borne in mind that the figure of the healthy cor-

it would appear that this change consists more especially in the rounding off of the apex of the cone.

Fig. I. of the following diagrams is an accurate profile of the eye of Alfred

Fig. I.

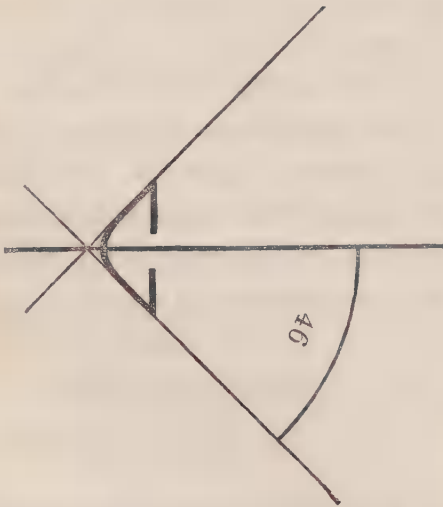
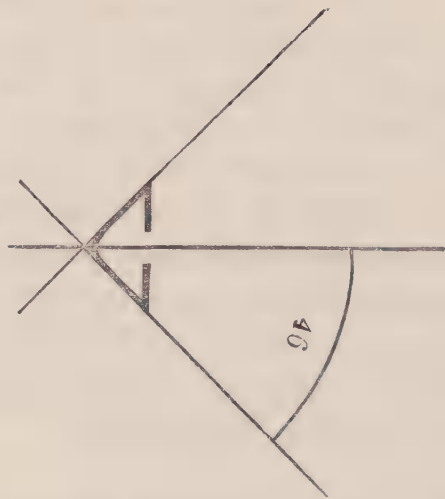


Fig. II.



Adams, on his admission into the Infirmary. Fig. II. is the same eye after thirteen weeks' treatment, in which this rounding off is very apparent.

nea is an ellipsoid of revolution about the major axis,* through which the curvature of all its sections is equal; that it presents, in every direction, an arc of $96^{\circ} 55' 20''$; that "rays of light, falling upon it at an angle more acute than 48° , pass through it;"† and that it is essential to perfect vision that all rays im-

* *Sur la Courbure des Milieux Réfringens de l'Œil chez le Bœuf*, par M. Chossat. *Annales de Chim.* tom. x. p. 337.

† *Institutions of Physiology*, by J. Fred. Blumenbach, M. D. Translated by John Elliotson, M. D. 3rd edition, p. 173. London, 1820.

Some very strange and unaccountable misconception appears to have arisen with regard to this passage of Blumenbach, which has been contorted and twisted into an infinite variety of shapes by each successive writer, according to his own peculiar views of the subject.

Mr. Travers says (*Sketch of the Physiology of the Eye and its Appendages*, p. 49), "the rays which fall within an angle of 48° , or thereabouts, measured on the surface of the cornea, pass through it, and are refracted in their passage. Those which are not included within this angle are reflected by the verge of the cornea and the sclerotic coat."

Mr. Lawrence (op. cit. p. 49,) says, "All the rays falling upon the cornea do not pass through it; in order to permeate it they must strike upon the part within a certain given angle (of about forty-eight degrees). Those which fall upon it more obliquely, are reflected from it, and produce that sparkling appearance which characterizes the living eye, and which it is necessary to introduce into portraits, in order to give them a character of life. The same reflection produces the image which we see behind the cornea, as that of our own countenance, when we are examining the eye, or that of an opposite window."

Blumenbach is not speaking of the *incident angle*, as is evidently understood by Mr. Lawrence, but of the angle formed by the axis of the eye and a radius from the centre of the circle, of which the cornea is a segment, to the junction of the cornea and sclerotica. The question is the size of the cornea, and not the incident angle of rays impinging upon it.

Were even Mr. Lawrence's premises correct, he gets into some little difficulty when he endeavours to account for the production, behind the cornea, of the image of our own countenance, when examining the eye of a patient, by attributing it to the same ("oblique") reflexion. It is self-evident, from the position of both parties, that the reflexion here spoken of must be from rays at a perpendicular incidence.

Mr. Travers' language is correct, inasmuch as he says, that all rays which are incident to the cornea will enter, whilst all those which do not impinge upon it cannot pass through it. He is not quite so clear when he says that those rays

pinging upon it, which enter the pupil, except that coincident with the axis of the eye, be refracted, and made to converge and unite in a focus upon the retina; and, that, for the perfection of the images there formed, the accurate convergence of all these rays to their respective foci is imperative; and, consequently, that if rays parallel to the axis of the eye, or bundles of peripheral rays of any given cone or cones converge and unite in a focus at a point anterior to, or beyond the surface of the retina, vision is indistinct: and that, in the former case, the rays, not meeting the retina, will decussate and pass onwards, forming, when they do impinge upon its surface, circles of light, exclusive of the bright focus of the central rays, corresponding to the diameter of the base of such cone or cones at the point of contact with it. Hence it follows, that if, from undue refraction by the corneal cone, one or more of such cones be formed, so will a corresponding number of such circles, each within the other, be pictured upon the retina at the point of contact of such peripheral rays. This will be rendered apparent by the annexed diagram, Fig. I.

As, however, I am dealing with the cornea, and not with

which are not included within an angle of 48° , or thereabouts, are reflected by the verge of the cornea and the sclerotic coat. This would have the effect of making the cornea appear to be encircled, at its junction with the sclerotica, by a ring of dazzling light of intense brilliancy:

————— lætos oculis afflârat honores.

Sir John F. W. Herschel, however, sets the question at rest. He says (Article "LIGHT," *Encyclopædia Metropolitana*, p. 367, § 171), "When a ray of light is incident on the surface of any transparent uncrystallized medium, a portion of it is reflected; another portion is *dispersed* in all directions, and serves to render the surface visible; and the remainder enters the medium and pursues its course within it."

And at page 369, § 184, we find, "When the ray is incident on the exterior surface of the medium, a portion is reflected and the remainder refracted. The ratio of reflexion to refraction is smallest at a perpendicular incidence, and increases regularly till the incidence becomes 90° ; but even at *extreme obliquities*, and when the incident ray *just grazes* the surface, the *reflexion is never total*, or *nearly total*, a very considerable portion being always intromitted."

the lens, I have supposed in Fig. I. and Fig. II., the latter to have been removed, and the eye, therefore, to be in the condition in which it would have been, had the patient submitted to its extraction or solution for the cure of that defect of vision occasioned by the "increased refractive powers" of the conical cornea. In the case before us its presence would only have the effect of augmenting the undue convergence of the rays. I have not taken into calculation the refraction of the rays by the vitreous humour, as this is foreign to my object, but have allowed them to pass on in straight lines. It may be well, notwithstanding, to keep in view that the index of refraction of the cornea and aqueous humour, taken together, is 1.337, or, the sine of incidence and refraction as four to three; that the mean refractive index of the crystalline lens is 1.384; and the refractive index of the vitreous humour, 1.339.

Neither must it be forgotten, that, in the disease under consideration, the sphericity of the cornea, so to speak, is totally lost, saving so much of its obtuse apex as approximates to the form of the healthy cornea, and that we have no longer to treat an ellipsoid of revolution, but a plane surface, the slant sides of the cone.

In the annexed diagram, Fig. I., let ABC represent the sclerotic coat of the eye, magnified four diameters. DD the healthy cornea. EE the sides of the corneal cone, subtending with the apex F an angle of ninety-two degrees. FB the axis of the eye. GG the iris. L a ray coincident with the axis of the eye FB. HIJK kjih are rays parallel thereto. Kk traverse the corneal cone at the same distance from its apex F, and intersect the line of its axis at the point M, decussate and pass on to Qq. Jj intersect the same line at N, decussate and pass on to Rr. Ii at O, decussate and pass on to Ss; and Hh at P, decussate and pass on to Tt.

In Fig. II. let ABC, as before, represent the sclerotic coat of the eye, magnified four diameters. DD the healthy cornea.

EE the sides of the corneal cone, subtending with the apex F, an angle of ninety-two degrees. FB the axis of the eye. GG the iris. Let H be a ray from the object viewed coincident with the axis of the eye, and let II, two rays parallel thereto, traverse the corneal cone at the same short distance from H, the refraction being there inconsiderable, they intersect the axis at the point χ . JKLM, four converging rays falling on the sides of the cone at $no\ pq$, and refracted, J to α —K to β —L to γ —M to δ . N, a cone of five rays, $\epsilon\zeta\eta\theta\iota$, falling upon the side of the corneal cone near its base, the peripheral rays $\epsilon\iota$ at $\kappa\lambda$, and refracted, ϵ to α — ζ to b — η a ray perpendicular to E, the side of the corneal cone, passing on unrefracted to c — θ refracted to d —and ι to e . OPQRSTU, seven converging rays falling upon the opposite side of the cone below I, and refracted, O to f —P to g —Q to h —R to i —S to k —T to l —U to m . V, a cone of six rays, $\mu\nu\xi o\pi\rho$, falling upon the side of the corneal cone near its base, the peripheral rays $\mu\rho$ at $\sigma\tau$, and refracted, μ to n — ν to o — ξ to p — o to q — π to r —and ρ to s .

It will be seen that in Fig. II. the ray coincident with the axis of the eye, and those parallel thereto, falling upon the obtuse summit of the cone, which, at this spot, bears some resemblance to the natural cornea, pass through it, the latter being duly refracted by it and the aqueous (and crystalline, if not removed) and vitreous humours, depicting on the retina the image of the object viewed; as, for instance, in the case before us, the patient was able to distinguish the point of his brother's nose and his mouth, and, by converging the rays through the pin-hole aperture of the card, even to read small print. JK, from excess of refraction, decussate in the anterior chamber, and pass through the pupil; L and M likewise decussate, and are then lost on the anterior surface of the iris; whilst OPQ, though they do not decussate each other, are yet crossed by JKLM; but RSTU decussate each other, and intersect all the rest. Confusion of vision is consequently produced, and the patient is unable to distinguish objects in these different directions. The

cone of rays N, on the other hand, striking almost perpendicularly on the side of the cone E, suffer but little refraction, and proceed onward nearly in straight lines, except such as are reflected from the iris: this applies equally to the cone of rays V. Hence, the patient sees on the nasal, superior, inferior, and temporal sides of the cone near its base, as instanced above.

The numerous crossings and decussations of the rays in Fig. II., which take place in the anterior chamber, and before the rays can have reached the lens, plainly shew that the removal of the lens can neither compensate for this intricacy of distorted rays, nor rectify the irregularities of their course; much less unravel the labyrinth of confusion created by the excess of refraction by the corneal cone. How then, let me ask, can we be justified in recommending the removal of a sound part of the organ of vision, in order to cure an error of function occasioned by disease of another part? The lens is not at fault, and its removal is not only uncalled for, but ought, on every principle, to be strongly deprecated.

Fig. III. shows the course which the same rays, falling upon a healthy cornea, would take in their passage through the anterior chamber.

If it be contended, that the solution of the lens would admit of a sinking or flattening of the corneal cone, it must be replied, that no such sinking or flattening could ensue. Let us suppose, for the sake of argument, the disease to consist in a superposed solid cone of diaphanous matter, a morbid growth of the centre of the cornea, it could not sink, neither could it flatten, nor become more obtuse; and if, on the other hand, we are to consider it as consisting in an altered form of the anterior chamber, an increase in the antero-posterior diameter, a hollow corneal cone, with vertex of extreme tenuity, the sides increasing in substance towards the base, as described by Jæger, an increased secretion of the aqueous humour, consequent upon solution of the lens,

would, in either case, fill the space previously occupied by this body, and thus perpetuate the deformity and the disease.

Until, therefore, the external form of the cornea be changed, —until this conical projection, be it a solid cone, be it, on the contrary, a hollow cone, with vertex of extreme tenuity, increasing in substance towards the base, be got rid of, all, or nearly all, the pencils of light incident to the upper portion of its surface must be unduly refracted, producing excessive and irregular convergence, and consequent confusion in the direction of the rays of light, for which nothing can compensate, which nothing can rectify, neither the abstraction of the natural lens nor the superaddition of an artificial one. Hence, I repeat, the removal of the lens is uncalled for, injudicious, and indefensible.

The late Mr. Tyrrell hit upon a very ingenious, though very inefficient expedient for remedying the defective vision. "It consists in altering the position of the pupil, and removing it from beneath the centre of the cornea, or that part which has its figure most changed, to near the margin, where the least change has occurred; the error in refraction is consequently much lessened, and the vision becomes more perfect, and the focus lengthened."* This he effected by puncturing the outer and lower part of the cornea with a broad needle, and then dragging into the wound and strangulating it there, the pupillary margin and so much of the temporal portion of the iris "as is requisite to cause the pupillary opening of the iris to change its position, from the centre to the outer and lower part of the cornea."†

By this "simple plan," he says, he has "benefited the vision, and in two cases very considerably."‡ It is evident, however, that the beneficial effects of the operation upon vision must have been of an exceedingly limited and one-sided character,

* Op. cit. vol. i. p. 277.

† Ibidem, p. 278.

‡ Ibidem, p. 279.

insomuch as, supposing the new pupil to be at that part of the iris between G and D λ , Fig. II., the sole advantage gained would be, that rays parallel with the axis of the eye, from objects viewed between J and K, incident to the corneal cone with θ , would enter the pupil, as would also rays from LM. Objects from N and V were before visible, and remain nearly unaffected by the operation. On the other hand it does not obviate the confusion occasioned by the excessive refraction by the corneal cone.

Whilst, then, means have been proposed as curative, and experimental measures have been multiplied, the results have been uniformly unsatisfactory and abortive. Writers, how much soever they may have differed in their pathology and indications of cure, are unanimous on this point.

III.—*With reference to a more successful mode of treatment.*

I now proceed to detail three, out of several cases which I have treated during the last ten or eleven years, both in public and private practice, under a full conviction of the truth of the observation so frequently made by one of my most gifted teachers, the late Mr. Abernethy, “that a case is worth all the reasoning in the world, and one fact better than a hatfull of theory.”

CASE I.—Hannah Hudson, æt. 28, was admitted under my care, May 1, 1832, a patient of the Brighthelmstone General Dispensary, with conical cornea of the left eye. I directed a blister for the temple, to be dressed with cerat. cantharidis; five grains of blue pill to be taken every night, and a mixture with quinine and Epsom salts, twice during the day.

May 5th. Iodine was exhibited internally, used externally as a collyrium, and rubbed into the eyelids every night, in the form of ointment.

June 7th. I directed, in addition to the iodine, an emetic, consisting of zinci. sulph. gr. xxv., to be taken early in the morning twice a week.

July 12th. A disposition to the same disease in the right eye much lessened. There is still a circle round objects viewed with this eye, yet she can see to read with it better, and at a greater distance.

July 23rd. A slight attack of fever suspended the treatment until the

26th. The emetics were now exhibited every morning; the iodine was continued externally and internally; occasionally, leeches were applied to the eye, and unguentum hydrargyri fortius was substituted for the unguentum iodinii. Under this combined treatment she remained, with trifling and unimportant variations, until

Oct. 25th, a period of nearly six months, when she was discharged "*much relieved*."

The success attendant on this mode of treatment was exceedingly gratifying and encouraging.

About this time, in consequence of a suggestion of Mr. Guthrie,* I determined to make use of emetics and purgatives only, without iodine, combining the aperient with the emetic, as prescribed by him. In the above case, my object in administering iodine was to endeavour to promote absorption, through its agency, of that which I then believed to be superposed deposit of corneal matter. It was not long before an opportunity presented itself for putting this modified plan of treatment into operation.

CASE II.—Anna Hollands, æt. 21, said to be subject to "epileptic fits," but which were, more probably, of an hysterical character, was admitted, under my care, 12th March, 1833, a patient of the Sussex and Brighton Infirmary for Diseases of the Eye, with conical cornea.

On her admission the left eye only was affected. She was ordered to take

* *London Medical and Surgical Journal*, vol. i. p. 361; Lectures delivered at the Royal College of Surgeons in London, 1832.

Zinci sulph. \mathfrak{D} i.

Magnesiæ sulph. \mathfrak{z} iv.

Primo mane quotidie.

She persevered with the emeto-purgative plan for upwards of twelve months, when she was discharged "*perfectly cured.*"

About eighteen months after her discharge she was re-admitted, the disease having returned. The same treatment was steadily pursued for several months, *with like good results.*

I copy a few observations made from time to time in my note-book.

March 19th, 1833. Says she sees better. Upon looking at a candle, sees a circle nearly twelve inches in diameter.

26th. Says the circle round the candle is not more than four inches in diameter. Sees every thing very much better.

April 9th. Circle diminishing. Now about the size of a tea-cup.

23rd. Size of a wine-glass.

In this way the improvement progressed gradually towards "*perfect recovery.*"

I frequently inquired of her, during the treatment, whether she found the emetics and purgatives debilitate her, or interfere with her general health, to which she invariably replied—"no, but that, on the contrary, *her health had improved.*"

It appears that in 1836 this patient's right eye became affected with the same disease, but though she accompanied to the Eye Infirmary, in September, 1839, her friend Mary Boys, who lives in the same village, and whose case is detailed below, she was not desirous of submitting to that treatment which had cured the left eye, "*because she was able to see as well as ever with that eye.*"

May 22nd, 1843. I saw Anna Hollands this day. The left eye continues perfectly free from disease. She can see with it to read the smallest print with ease, and without any assistance

from glasses. The right eye is in much the same condition as it was in 1836—very conical.

CASE III.—Mary Boys, æt. 27, a dressmaker, admitted, under my care, a patient of the Sussex and Brighton Infirmary for Diseases of the Eye, 10th Sept. 1839, the subject of conical cornea of the left eye to an extreme degree.

Was ordered to take

Antimonii potassio-tartratis gr. i.

Magnesiae sulph. ʒ iv.

Primo mane quotidie.

Dec. 13. Decidedly better. Cornea flatter.

Feb. 4th, 1840. Cornea flatter. Says she can see better.

March 17th. Cornea very much flatter. Says she can see better. From this time she absented herself from the Institution, with the exception of occasional visits.

Aug. 21st. I saw her again; says she “sees much the same.” The right eye has a slight conical appearance, which, she thinks, begun about three months since. Left cornea flatter.

Nov. 24th. Can see much better; and, at her own request, was discharged.

May 10th, 1842. She was readmitted with conical corneæ. The emeto-purgative plan was again had recourse to. She took the remedies more or less regularly, at first every day, and then once or twice a week only, from this date to

May 2nd, 1843, when the corneæ being nearly flat, she was discharged, sufficiently recovered to resume her business, *improved in health*, having gained flesh during the treatment.

The detail of similar cases could not add anything to that which has been already stated.

It is worthy of observation, that, in Case I., despite the full and free employment of the iodine for five weeks, no diminution of the disease took place until after the emetics were combined with it and the aperient. How much soever I might then have been disposed to attribute a portion of the benefit to the absorbent power of the iodine, subsequent experience has shown

me that the sole merit is due to the emeto-purgative plan of treatment.

I am now in the habit of prescribing zinci sulphas, which I much prefer to antimonii potassio-tartras, having found that its good effects are fully equal to those of tartar emetic, whilst its operation is certainly much less distressing to the patient. Repeated experience has confirmed this preference.

The Association will not have failed to have remarked the fact of the return of the disease in Case II. after the discontinuance of the emetics, and of its subsequent removal by their re-employment. Neither will the circumstance of the second eye becoming affected after this period, and the continuance of the disease up to the present time, *without treatment*, have escaped attention.

In Case III. it will be seen that the interruption to the plan of treatment from 4th February to 21st August, afforded the other eye an opportunity of developing the disease.

IV.—*An attempt to explain the rationale of such treatment, by a reference to the anatomical structure of the part affected, and to the probable pathology of the disease.*

It would be matter of absolute impossibility to attempt to account for disease, or to explain either its pathological condition, or the action of remedies, without due reference to the anatomical structure of the part under consideration; but, on the present occasion, on the very threshold of our investigation, we are beset with difficulties and obstructions.

I am yet not without hope of being able to approximate somewhat towards the rationale of the treatment, and *modus operandi* of the medicine.

Mr. Guthrie professes to know nothing about it. He appears to have prescribed tartar emetic and epsom salts, as I prescribed sulphate of zinc and sulphate of magnesia, with iodine, “empirically.”

We are told by some anatomists, that the cornea, that membrane which fills so important an office in the animal economy,

has not any blood-vessels, absorbents, or nerves.* Better to have said, “doubtless it has not only blood-vessels, but nerves and absorbents, though inappreciable to our senses.” For why deny to the living cornea the existence of that, of which, under disease, we have daily evidence.

Transparency of the most perfect kind is essential to the cornea, but do we not see healthy and diseased actions take place in this membrane as rapidly as in any other part of the body, and can we for a moment suppose that it is unorganized? Are we to be left to infer that Infinite Wisdom has not the power to create transparent vessels and nerves? Because our visual organs cannot detect their delicate and diaphanous texture, though our reasoning faculties must admit their presence, are we therefore to deny their existence? We ought rather to be struck with increased wonder and admiration at this further proof of beauteous and harmonious design in the works of Omnipotence, and of his admirable adaptation of means to the end. Need we be reminded that we are “fearfully and wonderfully made.”

The cornea, in common with other structures, is liable to inflammation, ulceration, suppuration, mortification, &c. In ulceration of this membrane, for instance, do we not see vessels carrying red blood to the ulcerated portion? Are we to suppose these vessels had no existence previously, and that they were just formed for the express purpose of repairing the disease? If so, it would imply an innate power of creating vessels for the repair of mischief, when that mischief arose; with another more extraordinary power still, that of getting rid of them, most effectually, when no longer necessary! What, I would ask, becomes of these vessels when the injury is repaired? They are no longer visible. Do they merely cease to carry red blood? Do they then circulate only serous matter, or are they altoge-

* Elle ne paraît pas contenir de nerfs ni de vaisseaux sanguins.—*Anatomie de l'homme*, par Jules Cloquet, tom. iii. p. 345; Paris, 1828.

ther obliterated? We must admit, inferentially at least, that there are vessels, diaphanous vessels, but that they carry only the thinner and serous parts of the blood, serous vessels. How, otherwise, could disease be removed or could wounds heal? After an operation for extraction, for instance, whence comes the plastic matter which glues together the lips of the wound? Blood-vessels, then, must and do exist in the cornea.

But are there also absorbent vessels and nerves? That there is an *absorbent function* no one will pretend to dispute, though the existence of lymphatics, until lately, was denied.

It is an acknowledged truth, that nerves always accompany blood-vessels. If, then, we admit the presence of the latter, though of so translucent and admirably delicate a texture that they elude our search, our microscopic investigations, our most powerful lenses, may we not infer that the usual accompaniments of blood-vessels exist here, as elsewhere.*

Touch but the cornea, or, rather, its external covering, with the finger nail, are not excruciating pain and lachrymation induced? Does it not feel most acutely? But, it may be said, the covering of the cornea is not the cornea. I admit it; but it is, nevertheless, endowed with the most exquisite sensibility, the product, be it remembered, of nervous presence; yet, this investing membrane is also diaphanous. No nervous fibrils are seen threading their way over its surface; yet, there they are, and in a most refined and exalted state of sensibility.

But what direct proof, if any, have we that blood-vessels, nerves, and absorbents exist in the cornea? What say anatomists, of the cornea, and of its organization?

* Sir John W. F. Herschel, when speaking of the probable muscular structure of the crystalline lens, says, "in it we have satisfactory evidence of a muscular structure; and, were it not so, the analogy of pellucid animals, in which no muscular fibres can be discovered, and which yet possess the power of motion and obedience to the nervous stimulus, though nerves, no more than muscles, can be seen in them, would render the idea of a muscular power resident in the crystalline easily admissible, though nerves have not yet not been traced into it."—Article "Light," in *Encyclopædia Metropolitana*, p. 397, § 356.

“ The cornea consists of three layers besides the delicate layer of epithelium which invests its free surface. The most superficial layer is rendered, by hot water, immediately of a snowy-white colour; the most internal lamina is the aqueous membrane, which is attached to the lamina fusca of the sclerótica; the middle layer, which constitutes the chief substance of the cornea, is formed of an interlacement of bundles of bright fibres without any intermixture of corpuscles. This is, according to my observation, reduced wholly to chondrin by boiling.”*

The same writer says, “ the existence of vessels in the substance of the cornea is doubtful; they have never been injected.† Nevertheless, penetrating ulcers and granulations are formed in the cornea, which can scarcely be conceived to occur without the agency of vessels. In calves, of nearly the full time, I have repeatedly seen vessels containing red blood in the corneal conjunctiva, and could trace them with a lens more than a line over the margin of the cornea. Henle has injected and made drawings of these vessels; they measured from $\frac{1}{1319}$ th to $\frac{1}{694}$ th of an inch, and the finest twigs were not then injected; their trunks, which arose from a circular vessel that ran around the cornea, were somewhat larger. I have the preparations of these parts in my possession. Professor Wutzer has seen them. Professor Retzius has injected similar vessels in adult animals. It is well known that, in inflammation, the cornea contains vessels carrying red blood. I saw at Utrecht, in the possession of Schroeder van der Kolk, a most beautiful injected preparation of a slightly inflamed eye, in which the conjunctiva as well as the aqueous membrane were injected.”‡

* *Elements of Physiology*, by J. Müller, M. D.; translated from the German, by William Baly, M. D., 2nd edition, vol. i. p. 390; London, 1840.

† Professor Römer of Vienna has succeeded in injecting them.—*Bemerkungen über die arteriellen Gefässe der Bindehaut des Augapfels*; vom Professor Dr. Roemer, in Wien; in Professor Dr. Friedrich August von Ammon's *Zeitschrift für die Ophthalmologie*, vol. v. p. 21. Heidelberg und Leipzig, 1837.

‡ Op. cit. vol. i pp. 227–8.

“ All these facts, however, render it very probable that even the cornea and capsule of the lens, to which vasa serosa have been hitherto ascribed, are really provided with vessels carrying red blood.*

“ While, however, we maintain that blood vessels exist even in transparent membranes, we by no means prove that all the vessels of these parts are of such size as to admit the red particles of the blood. On the contrary, it is probable that the greater part of the more delicate vessels of these parts transmit only the fluid part of the blood, the liquor sanguinis.”†

Mr. Travers says, “ Numerous lines have been observed to form figures of many sides between the plates of the cornea in the eye of the negro, and supposed, from a reddish tinge, to be blood-vessels.”‡

Mr. Charles Bell says, “ In an eye in which the tunica conjunctiva was most minutely injected, as well as the internal vessels of the eye, I had resolved carefully to examine the structure of the cornea ; and after a long maceration, in which it had greatly swelled, I observed a set of vessels totally distinct from the extremities of the minute blood-vessels. The minute blood-vessels which were injected, stopped abruptly on the margin of the cornea. But these I now mention are particular ; they are in great profusion, large, and perfectly pellucid ; they are large towards the middle of the cornea, and diminish towards the margin. Their free communication formed a net work, deep in the thickened substance of the cornea. The size, perfect pellucidness, and intimate connexion of these vessels, might, perhaps, incline one to call this a cellular structure.”§

Lymphatics abound in the cornea ; they have been injected with mercury by Fohmann, who has shown that they exist in the greatest profusion throughout its substance. Arnold has

* Op. cit. vol. i. p. 228.

† *Ibidem*, vol. i. p. 229.

‡ Op. cit. p. 20.

§ *The Anatomy of the Human Body*. By Charles Bell, vol. iii. pp. 250, 251. London, 1803.

given a figure of them in his *Tabulæ Anatomicæ*, fascic. II. tab. 2, fig. 7 and 10.

With regard to the nerves of the cornea; the only direct evidence we have of their existence, is on the authority of Dr. Schlemm of Berlin,* who states, that “he has traced branches of the ciliary nerves into the cornea.” This, however, has been most positively disputed by Arnold,† after a very patient and minute dissection and microscopic examination of the eyes of man and the larger animals.

If, however, the actual existence of nerves in the cornea is to be disputed because we cannot detect their presence, their influence upon the blood-vessels and absorbents, which have been recognized, cannot, under any circumstances, be denied.

The ciliary nerves, it will be remembered, are derived from the lenticular ganglion, and nasal branch of the first division of the fifth pair.

The lenticular ganglion derives its long root from the nasal branch of the first division of the fifth pair, which branch, before it enters the orbit, receives a filament from the superior cervical ganglion; and its short root from the third pair of nerves; and receives, also, a distinct filament from the cavernous plexus of the sympathetic, connecting it with the rest of the sympathetic system.

The ciliary nerves, therefore, communicate with, and derive their influence from, the cerebro-spinal and sympathetic systems.

The general sensibility of the eye is derived from the ophthalmic nerve and its nasal branch, whilst the *nutrition* of the organ is *under the influence of the sympathetic*. This nerve, by virtue of its connexion with the lenticular ganglion, exercises

* *Encyclopädisches Wörterbuch der Medicinischen Wissenschaften*, vol. iv. pp. 22, 23. Berlin, 1830. Quoted by the editor of Ammon's *Zeitschrift*, vol. i. p. 113, under the section devoted to *Ophthalmologische Miscellän vom Herausgeber*. Dresden, 1830.

† *Anatomische und Physiologische Untersuchungen ueber das Auge des Menschen*, von Dr. Friedrich Arnold, pp. 20-23, pl. I. fig. 2. Heidelberg und Leipzig, 1832.

immense influence over the nutrition of the eye. If the superior cervical ganglion be removed, inflammation of the eye, with effusion of lymph, ensues; the same occurrence has been remarked by Mayer after tying the sympathetic nerve.*

In a deteriorated condition of the general health, the cornea frequently ulcerates. Of this we have daily examples in squalid, half-starved, atrophied and strumous children. As often do we see this state kept up or aggravated by leeches, blisters, low diet and darkened rooms, and as often rapidly get well under the opposite mode of treatment.

Dr. Mackenzie says, that "in emaciated infants particularly, he has repeatedly seen the cornea of one or both eyes become thin and prominent, and give way without much, and even without any apparent inflammation." "In 1832," he "saw several instances of the same destructive ulceration of the cornea, occurring after malignant cholera."† He aptly compares the state of such eyes to that of those wretched dogs, which Majendie, in the wanton performance of some of his miscalled scientific experiments, doomed to be fed, or rather starved, on purified sugar and distilled water, until they died from inanition, their death being preceded by perforating ulcer of the cornea, and evacuation of the humours.‡ These revolting immolations of brute creation at the shrine of science and philosophy, are a disgrace to humanity and the nineteenth century.

If it be ceded that blood-vessels, absorbents, and nerves exist in the cornea, there will be no difficulty in understanding how debility of the nerves may induce faulty action of its absorbent and nutrient vessels. For there is no local disease which has not its origin in the nerves of the part affected.

* *Gräfe und Walther's Journal der Chirurgie und Augen-Heilkunde*, vol. x. p. 3. Berlin, 1828.

† Op. cit. p. 577. See also, *A Case of Ulcerated Cornea from Inanition*, by Joseph Brown, M.D., in *Edinburgh Journal of Medical Science*, vol. iii., p. 218. Edinburgh, 1827.

‡ *Memoire sur les Propriétés Nutritives des Substances qui ne contiennent pas l'Azote*, p. 7. Paris, 1816.

On this point my highly talented and valued friend Dr. Billing says, "all *diseases*, in fact, commence, as I have already repeatedly said, by disturbance of the function of the solid parts of the machine; and, first of all, of the nervous system. This is solidism or neuro-pathology. The nervous system, it is superfluous to repeat, regulates and supplies all with energy. There is no organic sensibility, or organic contractility, independent of the nerves. Every natural impression is received by the nerves; every morbid agent is first felt by, and operates upon the nerves. Inflammation of cellular tissue, bone, conjunctiva, &c., through mechanical or other violence, result, as we have shewn, in consequence of injury to the peripheral nerves and to the capillaries."*

Diseased action having been once set up, whether in the absorbent or nutrient vessels matters not, either removal of, or additions to parts existing must ensue. Hence, if the absorbents be over active, thinning of the cornea would result, whilst nature, ever anxious to repair an evil, would be busied in depositing new matter, *externally*, to counteract the ill effects of the increased action of the absorbents going on *within*. This will explain the *growth* of the disease, and also the irregularities of the external surface of the corneal cone, described by Sir David Brewster; the central and internal depression, with circumferential thickening, found by Jæger; the hollow cone with vertex of extreme tenuity, gradually increasing in substance towards the base; and will, at the same time, account for "the laminæ being less moveable upon each other," as described by Mr. Middlemore, and, also, for the cornea not "giving way," upon the principle of its elongated form being *the product of growth*, and not, as Mr. Travers states, "the consequence of its having lost its natural resistance to the pressure of the contents of the globe."

Hence, I feel I am justified in stating that I believe conical

* *First Principles of Medicine*, by Archibald Billing, M.D., 4th Edit. p. 225. London, 1841.

cornea, *ceratoconus*, to depend upon faulty action, induced by debility of the nerves of the cornea, of its absorbent vessels, calling for an increased deposit from the nutrient capillaries, to repair the mischief arising from such faulty action.*

The disease is analogous to hypertrophy, with dilatation, of the ventricles of the heart, and to aneurism.

I would merely glance at the possible similarity of arrangement which the vessels and nerves of the cornea may bear to those of the *membrana pupillaris*. Converging, as they must, more or less, like rays to a centre, it would result, that the central part of the cornea must be the point where all meet. If, then, by impaired nervous energy, faulty action be communicated to the nutrient and absorbent vessels, we should have undue absorption and deposit at this identical point.

It may be replied that, admitting the reasoning to be just, I am here making general what ought to be considered the exception, and that, with this notion, every one ought to have conical cornea. Not so; the exception is the faulty action of the vessels, the consequence of some particular constitutional tendency. I merely speak of their probable arrangements, terminations, and commencements. In a state of diseased action, with such an arrangement, I think it more than probable that such a result might be foreseen and calculated upon.†

I shall now, therefore, submit the probability, in the disease under consideration, of gastric or intestinal disturbance or irritation, inducing, through the medium of the *par vagum*, sympathetic, and ciliary nerves, faulty action of the absorbent and nutrient vessels of the cornea, the combined effect of which would be conical cornea.

* This increased deposit would observe the same laws as do parts which are undergoing hypertrophy, where, though the nutritive matter effused assumes first the form of nucleated cells, yet each tissue exerts a different assimilating influence on it, and causes the transformation of the cells into tissue of its own kind, and not into mere fibrous or cellular tissue, as is seen in inflammation.

† Professor Römer has lately shewn, by injection, that such is the actual distribution of the blood-vessels of the cornea. *Op. cit.*

Had the time permitted, it was my intention to have discussed, more fully, the rationale of the treatment before detailed.

I must now content myself with remarking, that whatever would restore the healthy functions of the nerves, or increase the energy of the nervous system, so as to communicate to the capillaries of the part a tone or power to resume their healthy action, would give a check to the disease, and that a continuance of healthy action would allow time for the cornea to re-acquire its normal form and refractive powers.

We have not a sufficient number of recorded experiments to determine directly the influence of the nerves on the action of the capillaries.

I cannot, however, on this point, do better than quote the words of my friend Dr. Billing. "Let us see," says he, "how far we can go in proving that the *capillaries depend upon nervous influence* for their contractile action. Blushing is, perhaps, the most unequivocal proof that an alteration in the nerves is the cause of sudden dilatation of the capillaries. It is not the action of the heart alone which causes the partial flush, for, first, the heart often acts stronger without causing blushing, and next, the blush is partial; whereas, when the mere action of the heart causes increased redness of the skin, as from exercise, it is not partial, as it is in blushing from mental emotion. And this, which is sudden weakness of the capillaries, has been commonly attributed to the 'increased arterial action,' and 'determination to the face.' I attribute this giving way of the capillaries to derivation of the nervous influence, which, being directed to or expended in the brain more freely by mental emotion, robs, for the moment, the capillaries of the face of their energy."*

The same writer has shewn that "emetics and purgatives possess a sedative and constringent power,"† and that "antimony

* Op. cit. pp. 27, 28.

† Ibidem, p. 171.

exerts a locally tonic or astringent effect on the capillaries of inflamed or congested parts, as well as on those of all the secreting structures.”*

It is worthy of consideration how far small and constantly-repeated doses of antimony, or of any other metal, such as mercury, zinc, or copper, may produce the same beneficial effect upon the disease as emetics with purgatives. Formerly, fever was treated by the daily exhibition of emetics. We now obtain equally good results from small and oft-repeated doses of antimony.

The disease in question consists, essentially, in debility and elongation of the capillaries of the part, with morbid deposits. The cure, in their retraction by means of tonics.

It would occupy too much of our time to enter as fully as the interesting nature of the subject demands, into the different forms of sympathy, and their application in the treatment of disease. On these points the ably written chapter on “Sympathies,” in Baly’s translation of “*Müller’s Physiology*,”† will amply repay an attentive perusal.

In conclusion, I may repeat, that I believe conical cornea to depend upon some disturbance in the functions of the great sympathetic, spinal nerves, and par vagum; producing, through the medium of the lenticular ganglion and fifth pair of nerves, faulty action of the nutrient capillaries and absorbent vessels of the cornea itself: that emetics and purgatives, by the powerful influence they induce upon the gastric, associate, and consensual nerves, restore the healthy functions of the weakened nutrient and absorbent vessels, the result of which is a slow but progressive retraction of the diseased corneal growth, and a consequent restoration of vision.

* Op. cit. p. 99.

† 2nd Edit. vol. i. p. 804.

ART. XII.—*Upon the Causes and Treatment of Otorrhœa.*

By W. R. WILDE, M. R. I. A., Lecturer upon the Diseases of the Eye and Ear in the School of Medicine, Park-street; and Member of the learned Societies of Paris, Berlin, Vienna, and Athens, &c.

THE object of this short treatise is to explain the best method of conducting examinations of the ear; to offer a few practical remarks upon the causes, and the cure of discharges from the external auditory passage; and, if possible, to remove some prejudices that exist in the minds of the public, and profession also, with regard to their treatment. The first of these propositions necessarily suggests itself in order to carry out the success of the second and third; the fourth has been mooted by the prevalence of peculiar opinions in this country; and the whole is offered to the profession from the frequency of this affection, its general neglect, its constantly injurious effects, and its (at times) fatal termination. It is not my intention, in indicting this memoir, to call to account the various sins of omission and commission of our forefathers, to quote authorities, or review authors, their works and opinions, more than the purely practical intention of the essay requires. I shall, however, briefly enumerate the systematic divisions made by a few of the most approved writers of modern times of the affections of those portions of the auditory apparatus with which it is now our province more particularly to deal.

Discharges from the meatus auditorius externus, whether of a mucous, purulent, sanious, or sero or muco-purulent nature, are generally the result of inflammation. Inflammation of the ear may be divided into, the kind of inflammation; the texture affected; or the locality of the disease; and all modified by the age, temperament, habit, constitution, and hereditary disposition of the patient. With an organ of such great delicacy, sensibility, and vital importance, endowed with par-

ticular nervous energy, possessing peculiar vascular arrangements, and composed of so many structures in common with the rest of the body as well as those peculiar to itself—the skin, the highly organized dermal texture, with its special glandular development—cartilage, cellular, mucous, serous and fibrous membranes, muscles, ligaments, bone, periosteum, &c., we would naturally expect that the inflammation of each of these textures would give rise to peculiar characters. Thus, with the dermal texture, we have the diffused, the erysipelatous, or the herpetic form, appearing in the auricle and external meatus, and thus producing vesicles, bullæ, desquamation, ulceration, or mucopurulent discharge, as they advance in their progress, or extend into the ear; then comes the circumscribed form, as in abscess, generally in the anterior wall and floor of the external orifice; and the purely phlegmonous kind, in both the chronic and acute form, in the more internal parts of the tube, and the surface of the tympanic membrane. Again, we have divisions into the structure or locality affected, as of the pinna or external concha; the meatus; the membrana tympani; and the inflammation of the middle ear. We really know so little of the inflammatory affections of the internal ear, that I do not deem it advisable to mix them up with the present question.

Inflammations of the auricle are generally of an erysipelatous nature, and those of the cavity of the tympanum or middle ear, when arising spontaneously and not propagated from other parts, are mostly of a diffuse character, affecting the whole mucous membrane, and ending in suppuration. We now deal more particularly with those of the external tube and external surface of the membrana tympani. I would divide those into simple acute inflammation of the meatus and the tympanic membrane, diffused over the entire of the surface, analogous to the severe catarrhal inflammations of the eye; herpetic inflammation, chiefly affecting the cuticle and ceruminous and sebaceous glands, resembling ophthalmia tarsi; simple circumscribed inflammation or abscess of the tube, occurring chiefly at its orifice,

like hordeolum upon the margin of the eyelids; abscess occurring between the layers of the membrana tympani, like hypopion in the cornea;* chronic diffuse inflammation of the meatus and membrana tympani, with profuse muco-purulent discharge, analogous to chronic ophthalmia; and the same symptoms attended with a granular state of the tympanum, strongly resembling the well-known granular condition of the upper eyelid, and vascular state of the cornea, assimilating pannus. To these latter may be added the same symptoms and a similar disease with polypus growing from the walls of the external tube; and lastly, chronic otitis, attended with otorrhœa, complicated with fistulous openings of the cartilage, perforating ulcer of the tympanum, denudation of the ossicula, and polypus or fungus of the middle ear or drum; and caries of the bony parietes, and the mastoid process.

In this division of my subject I am aware that I differ from many eminent authorities, as for instance, my friends Doctors Kramer, Lincke, and Pilcher, but to enter here into a discussion of their various opinions would be foreign to my present purpose, and partake more of a critical analysis of their opinions than a practical exposition of my own, which, in the division that I have just made, have been based upon the observation of a vast number of cases, such as I have enumerated above. I may, however, state briefly the systematic divisions of each of these distinguished aural surgeons.

Kramer's classification of the diseases of the external ear consists of three divisions: first, those of the auricle—as erysipelatous inflammation, scirrhus degeneration, and furuncle;

* A general mistake appears to have crept into all modern writings (with one exception, that of the late Frederick Tyrrell), with regard to the proper application of the terms *onyx* and *hypopion*, the former being used to denote abscess occurring between the layers of the cornea, whereas it ought to be, as its very name implies, pus or lymph, which, by falling into the interior chamber between the cornea and lens, assumes the form of the whitish mark at the root of the human nail.

second, diseases of the external meatus, as erysipelatous inflammation of the glandular structure, the cellular tissue and the periosteum ; and, thirdly, diseases of the membrana tympani, as acute inflammation, perforation, and chronic inflammation.

Lincke's division of the affections of the external portion of the organs of hearing consists of wounds and injuries ; erythema of the outer ear, phlegmonous inflammation of the auricle ; frost-bitten auricle ; inflammation of the meatus externus ; and inflammation of the membrana tympani.

And lastly, Dr. Pilcher's classification of the inflammatory diseases of the same parts and structures, is into acute and chronic otitis, the former divisible into acute external otitis of the auricle, the meatus, and the membrana tympani ; and the latter, into chronic inflammation of the auricle and the meatus ; erythematic and chronic disease ; chronic inflammation with inordinate secretion ; polypus, fungus, and vegetation of the canal ; sinuses in the canal ; apthæ or herpetic ulcerations and chronic inflammation of the membrana tympani.

In these I have studiously avoided the mixing up other abnormal conditions or diseases of the auricle, external tube, or tympanal membrane, and have also excluded the diseases of the middle ear, except such inflammatory affections producing otorrhœa as present themselves upon the destruction of the membrana tympani, in which case the middle ear cannot properly be said to exist. Of those inflammatory affections of the auricle and meatus from the spread of exanthematous eruptions, or the ulceration produced by pemphigus gangrænosus, and also those diseases of the mastoid process and the lymphatic gland which lies upon it, I do not, in the present essay, intend to speak more than in a cursory manner.

One of the first steps towards the proper and accurate diagnosis of aural disease consists in acquiring a thorough knowledge of the condition of the auditory conduit, and the state of the tympanum and its external membrane.

Up to a very recent period we possessed no better means of examining the external meatus and the membrana tympani than that afforded by the usual ear speculum, made somewhat in the form of a crane-bill forceps, and derived, with various modifications, from the time of Fabricius Hildanus. Itard, Deleau, and Kramer have improved upon this speculum, which is that in general use in this country at present. Another description with three arms, and opening by a screw in the form of a vagina speculum has been manufactured by Mr. Weiss, the celebrated instrument maker of London, on the supposition that the external auditory passage could be increased in calibre by mechanical means. In making examinations of the meatus and membrana tympani with any of these instruments the chief requisite is a *strong direct light*, transmitted without interruption to the tympanal membrane or that portion of the passage which we wish to examine; this is best effected by means of the sun's rays, but as the ordinary specula can only dilate or straighten the external cartilaginous portion of the passage, a person accustomed to aural examinations can frequently, especially where the meatus is of a large size, observe the tympanal membrane, or, at least, a portion of it, without, as well as with, such an instrument, by merely lifting up the auricle with one hand and pressing the tragus forward with the thumb of the other, if the light is strong and made to fall directly upon the passage. In all such examinations, however, the patient must be seated beneath the operator, with the head slightly bent, opposite a window *through which the sun is shining* at the moment, and (in this country at least) if possible, between the hours of eleven and three.

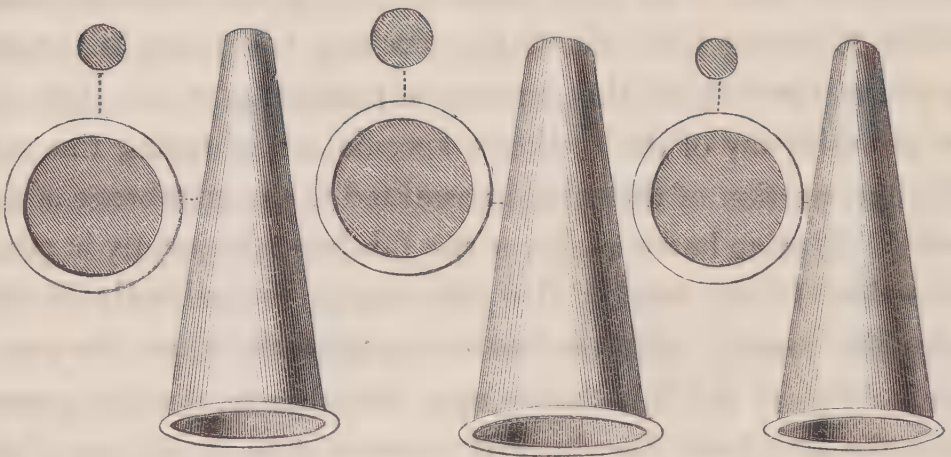
Artificial light has, however, been recommended, but it is not so requisite in this as in other countries.* Cleland used a convex glass, which was held before a wax light in order to concentrate the rays of light into the meatus. Bozzini to this apparatus added a concave mirror, but without

* In Vienna, for instance, during the winter months, there were very few days on which there was sufficient sunlight for accurate aural examinations.

much effect; Deleau further modified this apparatus by placing a lighted taper between two concave mirrors. The invention of the instrument of this description which possesses greatest power, is undoubtedly due to an aurist of our own country, Buchanan, the principle of whose apparatus exhibits an evident acquaintance with the laws of light, and the mechanism of optical instruments, but which was subsequently improved upon, and its effects increased by Kramer of Berlin, who substituted an argand lamp for the comparatively feeble wax light of the original inventor. This instrument, which in form, construction, and effect, very nearly resembles a common magic lantern, consists of a tin box, having its interior blackened, and being provided with a strong lamp, and powerful reflector, opposite which there is a tube containing two convex lenses, each two inches and a half in diameter. In using this apparatus, a disk of strong light about the size of a half-penny is thrown upon the opening of the meatus, a portion of which light is, by means of any of the ordinary specula straightening the cartilaginous portion of the tube, transmitted to the membrane of the drum. Having had occasion to use this lamp frequently in other countries, I may remark that, although it undoubtedly illuminates the passage and membrane very powerfully, yet the peculiar lurid glare which it throws upon the objects, decidedly prevents the examiner observing with accuracy those conditions of the parts (as in inflammation, &c.), where colour and the character of the vascular arrangement forms the chief means of true diagnosis;* and even Kramer himself is forced to acknowledge that “no artificial illumination can equal the light of the sun’s rays, or render this light unnecessary, on which account it must always be had recourse to in important cases, e. g. in operations in the vicinity of the membrana tympani.”

* The instrument which I have here described is now generally known under the name of Kramer’s ear lamp. Buchanan’s apparatus is represented in his “Illustrations of Acoustic Surgery,” and all these various forms of specula, &c., are figured by Lincke in his *Handbuch der Ohrendheilkunde*, 1840.

Having found that all the instruments heretofore invented for examining or operating upon the external auditory passages were defective, as a means of *transmitting light*, which is the only real object of a speculum,—for it is a mistake to suppose that any apparatus can do more than straighten and dilate the *external* aperture and external third of the tube,—I have, during the last three years, employed a little instrument for this purpose with the most successful result; this, of which the following is a description, was, I believe, first used by my friend Dr. Gruber of Vienna, but employing it as he did with the artificial light of Kramer's lamp, he had not the same opportunities of testing its value and utility. These instruments consist of conical silver tubes of different calibres, such as those represented in the accompanying wood-cut, each tube or speculum being an



inch and a half long, five-eighths of an inch wide at the greater aperture, and varying from two to four lines in the clear at the smaller extremity. Larger and smaller sizes will be occasionally necessary, but for the greater convenience of carrying in the pocket, I generally order a set of three, formed so as to fit into one another, and corresponding in size to the above representations. They should be made as light as possible, highly polished both inside and out, with a stout rim or burr round the larger margin, and the smaller aperture well rounded off, so as not to irritate the ear in entering. I have tried them of various sizes, and their sides running at different angles, as well as

with the interior blackened, so as to prevent reflection of the incident luminous rays, but those which I have described above I find to answer the purpose best.* In using this speculum, the various sizes of which are adapted to different ages and varieties of aural aperture, the patient must, if possible, be seated apposite strong sunlight, and the head placed at such an angle as that when the instrument is introduced into the meatus, the rays of light will fall directly *through it* upon the tympanum. A person can at once satisfy himself of the necessity and the degree of this obliquity, by placing the smaller end of the instrument on the palm of the hand, and elevating the greater aperture till the light falls on the bottom. In order to gain as much light, and for as long a period of the day as possible, I found it necessary to erect a small building with a double window, half in the wall and half in the roof, the pitch of the latter being about forty-five degrees, and possessing a south-eastern aspect; although in most cases strong sunlight passing through an ordinary window will be sufficient. This little tube is inserted into the meatus with one hand, while with the other the auricle is drawn upwards and backwards; it is pushed in as far as possible without giving pain; the head of the patient and the tube also are then moved slightly from side to side, and its inclination or obliquity altered till a full stream of light falls upon the tympanic membrane. In making this examination the operator must be careful to keep his own head out of the light, the interference of which is a very frequent cause of failure with those unaccustomed to aural examinations, and I need hardly mention that but one person can make this exploration at a time. As the tube (in normal ears at least) is now generally arrested about a quarter of an inch from its small internal extremity, by the narrow portion of the meatus at the junction of its middle and external thirds, then by gently moving from side to side the larger aperture,

* These tubes may be had at Topham's, 34, Grafton-street, or of Millikin the cutler, No. 12, and also of Weiss in London.

which is held between the fingers, the stream of light is made to play upon any part in particular all round the dilated portion of the meatus, immediately external to the membrana tympani, and by withdrawing it slightly, each portion of the meatus may be thus accurately examined in detail. By this means every part of the external auditory tube, and the membrana tympani, and even the position of the malleus within it, may be as distinctly seen and as carefully examined as any portion of the external surface of the eye, and this I have frequently demonstrated to several members of the profession; whereas, with the ordinary hinge-moving speculum, I must acknowledge that in many cases I was unable to satisfy myself as to the exact condition of the membrana tympani;—and that this is daily experienced by surgeons of eminence and deserved repute, I have, in addition to their own acknowledgments, the fact of cases constantly presenting themselves, in which a diagnosis had been made as to the state of the membrana tympani, totally at variance with truth, and which arose from their inability to see and examine it with the usual instruments.

To attempt any degree of *dilatation* of the auditory passage by means of instruments, shows great want of anatomical knowledge in their inventors, as the most any speculum can effect is to straighten the external cartilaginous portion of the tube, and thereby allow the light to play upon the interior. Had the accurate and honest-minded Saunders possessed this means of examining the ear, he certainly would not have stated that he had “never observed these excrescences” (polypi and granulations) “in the meatus externus when the tympanum was sound.” Another great advantage which this funnel-like speculum possesses over all others is, that it remains fixed in the ear, causing scarcely any inconvenience, and leaving one or both hands free for the application of instruments if necessary. It is also much more easily used with young children than any other.

I now come to speak of the second and fourth portion, on which I propose to treat, that of the *cause* of runnings or dis-

charges from the external auditory passages, and of the prejudice existing with regard to their treatment.

I suppose there is scarcely a member of the Profession in any of its various branches who has not been constantly applied to by patients, young and old, of both sexes, of every age, and among all ranks and grades of society, labouring under discharges from the external ear—one or both—more or less affecting the hearing, in some cases attended with tinnitus aurium, and in all giving rise to great annoyance and inconvenience, from the dirt and often fœtid smell which it occasions. With some this may be of short duration, and with others, the majority of whom are those that present themselves to surgeons practising aural surgery, of many years' continuance. Indeed one only wonders how sensible men could go through the world apparently unconcerned, with such a loathsome disease about them. Many, it is true, endeavour to conceal the affection, and others are deterred from taking proper advice by the prejudices of their friends, or even their family medical attendants. Let me, in a single instance, illustrate the general progress of a case of aural discharge, by no means imaginative, but presenting as the type of hundreds who daily apply for advice in these countries, where it is a disease of such common occurrence.

At the period when the mucus that naturally coats the membrana tympani, and lines the meatus during infancy, has ceased to be secreted—about the time of dentition, or at any other period of childhood—upon the sudden subsidence of purulent ophthalmia—during the progress, or as the sequel to any of the éxanthemata—either from the effects of cold, the appearance of scrofula, an impaired condition of the digestive functions, or any other of the causes producing inflammation—a child is suddenly attacked (often in the middle of its sleep) with pain in the ear, frequently of the most excruciating character, accompanied by brisk fever, and at times even producing delirium. Or the same symptoms may be present in an adult. What is the treatment generally had recourse to? Hot oil, turpentine,

essential oils, oil and laudanum, camphorated spirit, the volatile linament, and such other stimulating substances are unmercifully dropped into the ear. And if it be a grown person, in addition to all these, the friends will often have a large clove of garlic* forcibly thrust into the meatus, and a hot poultice of roasted onions applied to the auricle, or a piece of salt fat bacon is crammed into the meatus,—a very good remedy, by the way, for some cases of extreme dryness and want of cerumenous secretion, but worse than inapplicable in this instance. The disease proceeds, and days and nights of extreme anguish, attended with much restlessness and anxiety, are passed by the sufferer. No examination is made all this time of the parts affected, but purgatives are freely administered, and perhaps a blister is applied over the mastoid process. At length suppuration ensues, and when the discharge has been fully established relief is experienced; the disease then becomes chronic, the discharge profuse, flaky, discoloured, and frequently foetid; partial deafness follows, but the constitution suffering little, there is not much attention paid to the disease. If treatment be employed in this stage further than keeping the parts clean by syringing with hot water, in what does such consist? In again having recourse to nostrums of a still more empirical and violently stimulating nature than at first, as tincture of cantharidis, oil of originum, creosote, and the most violent escarotics, which are dropped into the meatus; and in order to exclude the air, and *keep in* the discharge, balls of black wool are crammed into the ears.

Should the friends or the patient seek still further and more distinguished advice, they are told to make their minds perfectly easy about the matter, that it is entirely a constitutional affection, and as the person gains strength and years the discharge will cease, hearing return, and all be well,—but that at this period it were not advisable to arrest the discharge,—an issue is inserted in the arm, and they are recom-

† I have seen three cases during the past year of violent inflammation of the membrana tympani and meatus caused by the improper use of this substance.

mended sea-bathing, with sometimes the use of a slight astringent lotion. Notwithstanding all this doctoring in the dark, the disease generally proceeds: if you inquire minutely about this period you will frequently be told by the patient or the attendants that two or three small bits of bone had come away with the discharge,—that this discharge varies in quantity and quality from time to time,—that sometimes it becomes thick and ropy, of a yellowish colour and mucous consistence, and very much less in quantity, that then upon the persons being exposed to cold, or draughts of air, &c., a sudden exacerbation of pain took place, the discharge became thin, whitish, flaky, and so much increased in quantity as to pour out of the meatus, and at night saturating the night-cap and pillow.

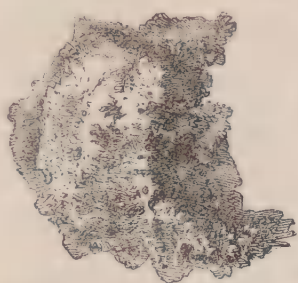
After this condition has proceeded for a year or two, and we come to examine the condition of the parts, we find the margin of the external meatus is thickened, of a pale red colour, and its upper portion, in particular, coated with yellowish brown crusts; from the under margin, and filling the cavity of the concha, proceeds a slimy, muco-purulent, ropy discharge, of a greenish yellow colour and foetid smell, while the meatus itself is filled up with purulent discharge, in the centre of which, in a great number of these cases, appears a small granular mass, not unlike the apex of a half ripe raspberry, and on lifting up the auricle to examine the ear pain is almost invariably complained of in the passage, and by pressing on the tragus, and sometimes on the mastoid process also. When a polypus of this description, and appearing through the external meatus, is perceived, surgical aid is again generally sought, the polypus is grasped with a forceps or ligature, and a portion of it forcibly torn away, but as the root remains, and soon sprouts into fresh existence, it is attempted to be destroyed by powerful escarotics, and a stick of nitrate of silver, of the size generally used in commerce, is thrust into the meatus as far as the size of the aperture, or the torture of the patient will permit. From this, fresh inflammation and ulceration of the walls of the canal ensue, causing intense pain,

extending through the head, and at times producing irritative fever. More emollient applications are then had recourse to,—the polypus resumes its original size, very seldom extending beyond the external opening of the meatus, and is either carried through life with the deafness which it causes, or proceeds to a more dangerous state to be described hereafter. Suppose, however, as it sometimes happens, from a different portion of the tube having been originally affected, that this polypus or fungus does not grow, or at least does not appear externally; the period of puberty arrives, the constitution, in accordance with the opinion originally expressed, does take on a new action,—the discharge diminishes, and then may even finally cease,—but undoubtedly with either a considerable diminution of, or a total loss of all accurate hearing, for reasons to be hereafter explained.

But this is not the worst,—the discharge may *not* then cease, the ulcerative process may then, or at any previous period *during the continuance of the discharge*, suddenly and rapidly extend itself; the tympanum and ossicula are destroyed, or, at least, the latter are rendered incapable of performing their functions; the disease spreads into the mastoid cells, and the whole mastoid process of the temporal bone becomes carious, fistulous openings occur behind the cartilage, a thin, highly foetid discharge ensues; the auricle frequently assumes a bluish, livid appearance; the motor portion of the seventh pair of nerves becomes affected, or absolute lesion of its substance takes place, the mouth is first observed to be slightly dragged toward the opposite side, and paralysis of the side of the face quickly follows; the palpebræ remaining apart, give the globe of the eye a peculiar prominent staring appearance; the cornea, for want of its natural covering, and the injurious effects of the atmosphere, abrades and ulcerates; the ala nasi becomes flattened, the mouth is much distorted (particularly if in a child when it cries), the whole cheek and side of the face looks fuller, hearing is in most instances completely destroyed on that side,

and the general health frequently sinks under such accumulated misery. At times, and that not unfrequently too, the brain and its membranes participate in this unhealthy action, and delirium, convulsions, coma, and death ensue; and if recovery ever takes place, it is after months of suffering, and always with deformity.

Instances of the loss of the whole or a portion of the mastoid process are by no means uncommon in surgical practice; this preparation, as represented in the accompanying wood-cut, and



which forms the entire bulk of the mastoid process, a large piece of the petrous portion of the temporal bone, including the posterior wall of the middle ear, and one of the semicircular canals, was removed in my presence from a child three years of age, by

Mr. Cusack, with a common dressing forceps, in the dispensary of St. Stephen's Hospital, in the year 1833. Having had charge of this case for a considerable time subsequently, my attention was then first called in an especial manner to affections of this nature. Cases of this description, however, the result of extension of disease from the meatus and middle ear, are not to be confounded with inflammation of the periosteum of the mastoid process, occurring idiosyncronously, nor of abcess occurring underneath it, nor between the dura mater and the bone, upon a corresponding portion of the internal surface of the cranium;—of this form I shall speak at another time.

To return, however, from this partial digression;—what was the original disease that produced the train of symptoms such as I have just described? What was the original condition of the ear upon the setting in of the discharge?—In all probability it consisted in simple inflammation of the lining membrane of the meatus and membrana tympani. If, at the very commencement of the affection, when it was only characterized by pain, the ear was properly examined in the way I have directed, it would be found that the tube was dry, slightly red, and painful to the touch; that the secretion of wax was either wanting or scanty,

of a black and hardened nature, and adhering closely to the floor and posterior wall of the meatus ; that the membrana tympani had lost its peculiar pearly polished appearance, and assumed a general slightly pinkish hue, and that (as occurs in very many instances) two or three red vessels could be discerned in it, coursing along the position of the handle of the malleus. If this examination were to be continued at a more advanced stage, it would be observed that the cuticle lining the meatus had become thickened, and could be easily detached in whitish flakes, underneath which a thin sero-purulent discharge oozed out, while the membrana tympani had become more vascular, and when the thin pellicle of cuticle which coats its external surface was cast off piecemeal by the discharge, it would be found as red, vascular, and villous as the palpebral conjunctiva of the lower lid, in the advanced stage of catarrhal ophthalmia ; the position of the malleus could then with difficulty be observed, the cerumenous secretion had entirely ceased, and detached pieces of cuticle were daily cast out of the ear with the discharge. Examine this ear a few months subsequently, and we find all trace of cuticle lost, and the whole tube converted into a muco-secreting surface, the membrane of the tympanum not only increased in vascularity but absolutely covered with papilliform granulations, while in some cases, at this period, small polypus excrescences will be discovered growing either from the posterior inferior aspect of the tube, where the bone and cartilage unite, or sunk in a sinus of the former, in its posterior wall near the tympanal membrane. At a still more advanced period the membrane of the tympanum frequently gives way, the middle chamber opens externally, and some of the ossicula, particularly the incus, are discharged ; from this period the disease may proceed, even to a fatal termination, in the manner which I have already described.

There is one other form of otorrhœa which may be here enumerated, though, in all probability, if the ear was carefully examined at the commencement of the affection, and that atten-

tion was not just then called to matters of more immediate consequence, it would be found to present the characters of Myringitis, which I have already detailed ; I mean that affection occurring during the progress or subsequent to scarlatina. This occurs in two ways, either by direct inflammation of the tube and membrane of the tympanum, occurring probably from the inflammation of the skin extending into the ear, and there producing mucous discharge in a fistulous cavity, while it desquamates all over the rest of the body ; or again, by the abscesses that take place in the neck and round the meatus and concha, opening into the cartilaginous or the fibrous portion of the tube, and there producing and maintaining, even after they themselves have healed, otorrhœa, from the diseased state of this portion of the organ. Measles not unfrequently produces a similar condition, but in that disease the latter mode of propagation is, I should suppose, much more rare ; I myself have not seen any such cases. Aural surgeons seldom see this affection of the ear till long after the original disease ; and from the imperfect modes of examination, and the little attention paid to it, we really know little or nothing of the exact mode in which otorrhœa is generated during the progress of the exanthemata or other fevers. The only satisfactory account given with, or by, the patient is, that when they rose out of the scarlet fever or the measles, or any other fever, they were deaf and had this discharge. To remedy these affections general surgery has not done much, so that in many instances medical men are glad to get rid of such patients ; and this, added to the prejudices in the minds of the community at large, and some of the profession too, as to the injurious effects of healing or “drying up,” as it is termed, discharges from the ear, has caused this affection, by ignorance and apathy on the one hand, and prejudice on the other, to be much neglected in this country.

Let us now briefly examine some few of those reasons assigned for the non-interference with aural discharges. Last month a lady applied to me with her son (one of those cross-

grained bears of children, the very plague of doctors), about seven years of age, and asked me if I could cure him of a very bad deafness, with which he had been affected for the last five years. After much coaxing and some frightening, I was permitted to look into the ears; both were filled with profuse mucopurulent discharge, ropy, foetid, and crusting on the external parts; an erysipelatous blush was around the thickened, scaly, orifice, and having succeeded in cleansing the meatus, I could perceive a polypus excrescence filling up both tubes. Hearing was much improved by the removal (for the first time for many months) of the discharge. Having explained the nature of the complaint, and that no progress towards the restoration of hearing could take place till the polypi or other excrescences that might be present were removed, and the discharge healed, the lady at once informed me, that unless I could restore her son's hearing without drying up the discharge she would have nothing to say to me, for that some of her children having died of water on the brain, she was told by her family physician never to let this "running from the ears" be stopped, or that if she did he would instantly be similarly affected. I do not mention this as a solitary instance, but as a type of cases that I meet with almost daily, and chiefly among the middle classes of society; the poor are unacquainted with such medical refinements. One patient is afraid of apoplexy, epilepsy, or paralysis; the mother of another fears convulsions, hydrocephalus, or sore eyes; and a third cannot be persuaded that it is not connected with his brain.

During the last summer an English lady desired my advice for otorrhœa, more on account of its unpleasantness than for any other reason; the history she gave of it was, that when quite a girl, at school, she was attacked with pain in one ear, attended by a discharge, and that the latter had continued ever since, sometimes more, sometimes less, the hearing always variable but yearly becoming worse, till now, that ear had become of little use in general society. Almost immediately upon the appearance of the discharge, and several times subsequently, she had

consulted a distinguished London practitioner in aural surgery, who had always informed her, that to heal up this discharge, profuse, foetid, and disagreeable as it was, would be highly dangerous, and that in all probability it would then “go in upon her brain.” On examining with a tubular speculum I found the cuticle on the surface of the auditory canal white, thickened, and coming off in flakes, beneath which poured out a thin discharge; the membrana tympani had become perfectly opaque, thickened, and white as a leucoma, it was also very insensible to the touch of a camel hair pencil or a probe, and it had fallen in towards the inner wall of the tympanal cavity, leaving the malleus projecting prominently outward; it seemed likewise to have lost all power of vibration. In this case the discharge was removed by brushing over the parts with a strong solution of nitrate of silver, syringing night and morning with tepid water, and the use of an astringent lotion; hearing is as yet, however, but little improved, every sound having, on that side, a dull muffled effect, nor can very much be at present expected, as it is more than probable, that independent of the obstruction arising from the thickened tympanum, the fine ligamentous and muscular apparatus moving the chain of bones, has, also, from the effects of inflammation, been rendered inutile.

These prejudices are of old standing and very general extension; they existed equally in the days of Saunders, who tersely asks, “what argument can be assigned against the cure of this disease that is not equally conclusive against all others. Is any one an abetter of the obsolete humoral pathology? He will contend, that the stoppage of a drain, which nature has established, is pernicious, and the morbid matter will be determined on the internal parts; but how can such a person venture on the treatment of any disease, even the healing of a common ulcer? Some years ago I thought this absurd doctrine had been totally exploded, and yet I constantly hear it adduced, to deter parties from interfering with this disease. Is a child the

subject of it, the parent is told it is best to leave it to nature and the child will outgrow it. Is it an adult, some other subterfuge, equally futile, is employed. The truth is, the disease is always tedious and difficult, and not always curable; and many are disinclined to embarrass themselves with the case who have not candour to make the true statement."

Many of those errors appear to have arisen with Lallemand and his followers; and because it has been observed that on the supervention of cerebral disease, discharges from the auditory passages have ceased spontaneously, practitioners, mistaking the cause for the effect, have been led to believe that their sudden "drying up" produced a metastasis to the brain, a notion as crude as it is unsupported. Cases, no doubt, have occurred in which the improper application of powerful escarotics and stimulating injections, thrown by means of a syringe into the external aural tubes, have produced many of the disastrous consequences detailed by authors; but no record has come down to us of the precise pathological condition of such ears; nor do I believe that such ever were, or could, at the time, have been properly examined. In all probability these cases were ones where extensive caries had already existed, and the very meninges of the brain may have been exposed to the improper remedies ignorantly applied in the dark by persons who, having committed the mischief, subsequently raised an outcry against the healing of aural discharges in *all* cases.

Mr. Williams, in support of his opinion, that "it is better not to interfere with this discharge from the ear: if suddenly checked in children it frequently causes skin diseases, swelled glands in the neck, inflamed eyes, and sometimes brain affections:" and again, "in adults, if discharges from the ear, particularly if from the internal ear, be, from any circumstances, suddenly stopped, head symptoms immediately commence," adduces cases related by Sir B. Brodie, Itard, Valsalva, Dr. O'Brien, and Dr. Denmark. I find, however, upon carefully examining into the history and post mortem appearances of

these instances, that in four there was extensive caries of the petrous portion of the temporal bone, with apertures leading from without into the very cavity of the cranium, but which, from want of proper aural inspection and careful examination into the previous symptoms and the course of the disease, had not been even suspected; and the fifth appears to have been either the effect of injury or inflammation of the brain occurring after fever much more than any result of aural disease. This latter case was that of a soldier who happened to have otorrhœa subsequent to protracted fever, for which he left the hospital without leave, "got drunk, and was brought back by the corps de garde next morning." Head symptoms set in, and then we learn that "the discharge was entirely suppressed." He died, and on inspection after death, "the sinuses were gorged with blood, the dura mater was detached from the bone throughout the whole extent of the right temporal and part of the occipital fossa, and in the same situation was found about a spoonful of serum, almost yellow;" the dura mater was likewise coated with pus on its internal surface, the arachnoid thickened, the pia mater covered with puriform matter, and the lateral ventricle contained an ounce of thick serum. There was no other lesion of the auditory apparatus than the loss of the membrana tympani, which, however, it was previously stated, had been deficient since childhood. Will any pathologist take upon himself to say that this was either extension of disease, or metastasis from the ear? Such cases are by no means of uncommon occurrence after fever. In fine, I have not been able to discover one well-authenticated instance where disease of the head supervened as a consequence of checking otorrhœa in a case where the condition of the ear had been previously ascertained, and that disease of the bone had not existed beforehand.

One of the chief supporters, and indeed, I might almost say, the introducer of this doctrine of non-interference, was Itard, who has related a case of death ensuing upon the intro-

duction of some linseed oil into the ear of a young child who was affected with otorrhœa. This case, which has gone the round of every work upon aural surgery, since the publication of Itard's book, was one of the very foundation-stones of the system advocated by its relater, although we know nothing of its previous history, nor what pathological appearances the bones of the ear or the brain itself presented. Not many years ago, St. John Long ascribed the death of one of his patients to the application of greasy substances to a sloughing sore which his liniment had produced; and surely with as much medical reason as that narrated by the Parisian aurist, since whose time all our works upon aural medicine recommend great caution to be observed with regard to the introduction of oily remedies into the ear! This instance is but one out of many in which a system of medicine has been grounded upon as slender facts by the modern French school.

If the bone is sound, we might with as much propriety refuse to cure a chronic or an acute ophthalmia, an ozena, or a mucocele of the lacrymal sac; and even if the bone is diseased remedies must also be had recourse to; but of this form presently. Although I have not met such a case, I can, however, easily conceive one in which a discharge from the ears had succeeded upon, and relieved head symptoms; or where the watery discharge consequent on injury of the head had become muco-purulent; in either of which, or analogous instances, no wise practitioner would interfere.

The causes of otorrhœa are, I believe, as I have already frequently expressed throughout this essay, proximately inflammation; remotely, this may be produced by a great variety of circumstances, among which cold, in some shape or other, is one of the most frequent. Writers generally recognize two forms of Otitis, acute and chronic, the latter usually following upon the former, and both producing the phenomenon which forms the subject of this paper. Chronic otitis may however, and frequently does appear as an original affection, attended with little

or no pain ;—it is no uncommon history to be told by the friends of a boy some eight or ten years of age, that the first notice they had of his condition (the deafness, as it is in too many instances, being attributed to stupidity) was that his pillow was stained with the discharge, when he returned from school at vacation. In infancy a thin mucous discharge may occur along with, and probably dependent upon, dentition ; and, at an age a little more advanced, it will often alternate with strumous ophthalmia. Of this description I have generally at the dispensary many cases on hands ; there is seldom much pain or swelling, and but few inflammatory symptoms attending it ; cleanliness, with a simple astringent lotion, or the use of the *vinum opii*, with such internal remedies as would prove efficacious in the original affection are here equally applicable, particularly slight counter-irritation at the back of the neck.

At a period a little more advanced we find the affection either commencing originally as *scrofula*, or so intimately connected with a *scrofulous* condition of the glands of the neck, and the general condition of the patient, as to leave no manner of doubt as to the nature of the affection. This appears in two ways, (somewhat similar to those which I have already described as caused by *scarlatina*), either by the commencement of a thin, whey-like discharge from the meatus, arising from a vitiated condition of the lining of the tube and *membrana tympani*, or by one or more of the suppurating glands communicating by means of a fistulous opening with the auditory canal and there producing a similar affection. For the most part these glands have likewise an external superficial opening ; but I have lately seen some cases in young children in which abscesses (generally lying immediately anterior to the tragus) opened into the meatus and had no superficial outlet ;—in such cases pressure on the parts in front of the tragus, or the act of mastication, presses out the matter.

Porrigio, *crusta lactea*, herpetic, and other eruptions extending to the ear, produce, particularly in unhealthy children, *otorrhœa*. Mechanical injuries, such as blows, or the introduction of

foreign bodies, will, no doubt, produce otitis, and afterwards discharge ; but unless in persons of marked strumous habit or very much broken in health, it seldom continues for any length of time or proceeds to anything serious. Under the head of mechanical injury has been reckoned imperfect and hardened wax ; but I can only say I have never witnessed it, nor do I believe it likely, from the way in which it is formed and retained, to cause otorrhœa. Fevers of every description (and indeed long illnesses of any kind), but the exanthemata and scarlatina more particularly, often run into aural discharges. I have met several cases of total deafness, and principally among young females, caused by this latter affection ; and in like manner inflammatory diseases of the eye, denominated by Doctor Mackenzie “ postfebrile ophthalmitis,” frequently occur as a sequel to remittent fever.*

Cold bathing is a much more frequent cause of otorrhœa (I suppose by producing slight inflammation) than is generally suspected. Mr. B., a scholar of Trinity College, had otorrhœa from his early childhood in one ear. By the advice of his medical attendants it was not interfered with, although the copiosis it occasioned was yearly increasing. In his instance, the promise of amendment in time was realized, at least as regards the discharge ; it ceased about four years ago, but he is now almost totally deaf at that side. During the heat of last summer he bathed in the sea, and almost immediately felt an unpleasant sensation in the affected ear, which increased to pain during the night, next day the discharge was re-established. On my seeing him some time after and examining the ear, I found that this profuse discharge proceeded from a fungous mass that grew out from the middle ear through a large aperture in the membrana tympani, over which it spread like the head of a mushroom, and which opening in the membrane had, no doubt, occurred during the progress of the original otorrhœa.

* London Medical Gazette, November 24, 1843.

I mention this case in particular, because it illustrates the position I have already laid down of the destructive effects upon the organ by neglect, and also of the careful manner in which patients should proceed even for years after the running has ceased. Persons having been recommended sea-bathing for the cure of the discharge, think they cannot have too much of a good thing, and continue it long afterwards. During the bathing season I meet with several cases of primary and secondary otorrhœa ascribable to this cause.

Erysipelas of the scalp proceeding into the ears, or, as is frequently the case, confined to the auricle and meatus alone, is a constant cause of chronic thickening and mucous discharge from the ears, but it is seldom profuse, and partakes more of the slight secretions attendant on other diseases of the skin, where generally the thickened cuticle continues to be thrown off for some time;—the passage however, never becomes, as in other cases, a purely secreting mucous surface, or throws out granulations or vascular excrescences.

Syphilis is enumerated by writers as a cause of otorrhœa: I can only say that I have never met with such a case myself, nor have I been able to discover the history of a well authenticated instance in the works of others. It yet remains to be proved whether the membrane of the meatus and tympanum is susceptible of the virus of gonorrhœa.

I have several times met with cases of otitis ending in otorrhœa, produced by improper syringing of the canal, under the supposition that the deafness arose from an impaction of wax, whereas the contrary was the fact. The cases were ones of defective power in the auditory nerve, in which there is (from what cause it is difficult to determine) very constantly a complete deficiency of ceruminous secretion, and the passage is remarkably dry. In these cases no proper examination had been made, or this error would not have been fallen into, for the syringing was several times repeated, and continued for nearly half an hour at a time. The other day a medical friend, to whom I mentioned the frequency

of cases such as this paper attempts to describe, very gravely advised me, as a general rule, in *all* cases of deafness, to “keep continually syringing,—it is always safe, and may do good,—I remember after having syringed a lady’s ear for nearly three months, I succeeded in getting out a large lump of wax.” Upon my showing him, in a few minutes after, the membrane of the tympanum with an aural tube, in a strong light, he candidly acknowledged that that was the first time he had ever an opportunity of observing or examining it in the living subject!

Caries of the bony case of the ear is not an unfrequent and always a dangerous source of aural discharge, but here a doubt arises as to what the original disease was,—whether it proceeded from otitis, acute or chronic, spreading to the periosteum, and thence to the bone,—or whether from the inflammation of the mucous membrane extending from the drum into the mastoid cells. This latter mode is what I believe frequently takes place in those cases when after the continuance of otorrhœa the mastoid process comes away. There are pathological specimens in existence that tend to confirm this view.

The splendid pathological collection of the Richmond Hospital in this city contains five most interesting and valuable preparations of disease of the temporal bone, and one of these is in exact accordance with this view of the case. The subject of this affection, aged 16, was idiotic, and nearly deaf and dumb. For a couple of months previous to her death she had pain in, and semi-purulent discharge from both ears, and was also frequently attacked with fits of epilepsy. Death took place suddenly. Mr. R. Smith, who presented the specimens, and laid the case before the Pathological Society, stated, that on the right side, the membrana tympani, the malleus, stapes, and incus were all destroyed, and the mastoid cells contained purulent matter. “The left side presented a very remarkable specimen of disease of the mastoid and petrous portions of the temporal bone. Above the meatus the temporal bone was perforated by a large opening, which communicated on one side with the cavity of the

tympanum, and on the other with the mastoid cells. *All the partitions of the mastoid cells were destroyed, and the whole cavity thus formed was filled with foetid pus*, mixed with particles of carious bone. The purulent matter had also penetrated into the vestibule, the cochlea, and the aqueduct of Fallopius. The foramen rotundum, and fenestra ovalis, were thrown into one large opening. On tracing the nerves, Mr. Smith found that the portio dura, where it passes through the aqueduct of Fallopius, was covered with lymph and purulent matter of a greenish hue. The dura mater covering the anterior surface of the petrous portion of the temporal bone, was slightly discoloured, but there was no pus in the vicinity. The great lateral sinus upon the same side presented the appearance of commencing inflammation; the lining membrane was of a dark-green colour, and the blood in the sinus was coagulated. There was in this case no paralysis or distortion of the face."

Had injections of any kind been used in this case, or had art interfered with it in any way, and that no examination had been made after death, it would undoubtedly (especially among the disciples of Itard), have been set down as one manifesting the deliterious effects of stimulating applications; or, had even milk and water been injected it would, as well as the linseed oil, have been forthwith expunged the aurist's pharmacopœia.

Among the instances of otorrhœa and death caused by caries of the petrous portion of the temporal bone, a very remarkable case has been recorded by Dr. Graves. The subject of this case was a scrofulous boy, ten years of age, who was admitted into hospital for dropsy and diarrhœa, of which he was "greatly relieved, when it was observed that there was paralysis of the right side of the face, but obvious only when the muscles of the face were in action. Thus the attempt to close the eye failed on the affected side. There was a discharge from the ear of the same side, which *originated seven years previously*. The opinion formed of the case was, that there was disease of the petrous portion of the temporal bone, and that with this

was connected the affection of the portio dura of the seventh pair, from which the paralysis might be considered to result. There was pain in the head at the right side, which after some time changed its place, and moved to the *back of the head*, and from this time the *discharge from the ear ceased*. The pain then moved down the spine. A few days before death there were tetanic convulsions, and an extreme sensibility of the entire surface of the body. Three years before there had been similar convulsions. The power of locomotion and the intellect continued to the last unimpaired. During the few days which intervened between the first appearance of the convulsions, and his death, they had recurred five or six times. The body was examined after death. The portio dura on the face exhibited no morbid appearance. Within the skull a perforation was observed in the dura mater, immediately opposite to the aqueduct of the vestibule in the petrous portion of the temporal bone, which was carious. A green foetid pus detached the dura mater from the bone in this situation, and also bathed the nerves at the base of the brain. The membrana tympani and internal ear had been destroyed. The brain itself appeared healthy. *The theca of the medulla spinalis was filled with pus*, but the medulla itself (of which Dr. Graves exhibited a drawing) appeared healthy, and the attachments of the ligamentum dentatum were all perfect."

This case is deeply interesting and instructive, for two reasons; first, it shows us the progress of aural discharges when unattended to, particularly in persons of strumous habit, as there can, I think, be little doubt but that the caries in this instance was a secondary affection, arising in all likelihood by extension of the original chronic otitis of the tube and tympanum; and had that disease been properly treated at the commencement it is more than probable that the caries would never have supervened. Secondly, we learn how, when the discharge ceases, dangerous symptoms and death follow; not from any metastasis, but in all possibility by the matter not finding a ready

outlet through the carious portion of the temporal bone, having fallen into the theca vertebralis, and pressed upon the spinal marrow; and this accounts likewise for the removal of the pain to the back of the head and down the spine, as detailed by Dr. Graves.

Mr. John Hamilton lately assisted with me in making a post mortem examination of Miss O., an old lady of 70, who having been for a considerable time affected with total deafness, noise in the head, and latterly some degree of drowsiness, suddenly fell dead, after she had risen, and made as hearty a breakfast as usual. In this case, we found subarachnoid effusion all over the brain, with deposits of lymph on the inner surface of the membrane, and all the traces of chronic inflammation; but the immediate cause of death appeared to be from the fluid in the cranium, which was considerable in quantity, having suddenly made its way into the spinal canal, and pressed backwards the medulla oblongata in a very remarkable manner.

In the case related by Dr. Graves, fortunately for the cause of aural surgery, injections were not had recourse to.

Instances of caries of the temporal bones producing death might be multiplied without end,—more however as the *effects* than the consequences of otorrhœa. The preparations in the Richmond Hospital Museum,—the circumstances of which have been recorded by Mr. Smith, exhibit the process of the inflammation, death, and separation of the bone in their various stages, all sooner or later acting upon the sensorium. In these, and I am led to believe in the great majority of instances also, the destructive process had proceeded *from without inwards*, and that what was originally an otorrhœa from an inflamed mucous membrane, spread to the periosteum, and thence to the bone itself.

Circumscribed inflammation and abscess of the brain, causing absorption or caries of the temporal bone, may (it is said) produce otorrhœa, and the pus may be discharged through the ear. Dr. Corrigan has related a case, and exhibited specimens, that would, at first sight, appear to lend credence to this opinion;

the subject of this case, a female, æt. 29, was received into hospital; semicomatose, vomiting, with a slow pulse, pain in the head, and a copious fœtid discharge of purulent matter from the right ear. Five days after admission she died; on examination it was found that “the brain was dry superiorly, and the veins enormously distended with dark-coloured blood; at the base of the brain, on the right side, was an abscess, in the substance of the brain itself, not encysted, and filled with a green fœtid pus. Sero-purulent matter was effused at the base of the brain. The petrous portion of the temporal bone was carious to a considerable extent; the dura matter covering it was discoloured, and there was purulent matter beneath it.” “It had been a question,” he adds, “whether the disease of the brain or that of the bone was the earlier. In his case they appeared both to proceed *pari passu*.” We are not informed, however, how long the discharge from the ear had existed. Were I to form an opinion on this case, I would say it had existed long before, and had produced the affection of the bone, and subsequently that of the brain. Authors speak of abscesses and collections of matter within the cranium finding their way through the *petrous* portion of the temporal bone, into the external auditory tube. This is a doctrine I cannot subscribe to—it is unsupported by facts; it is much more probable that if the brain was the *original* seat of disease, that death would have ensued long before this matter would find an outlet through the very hardest bone in the whole body.

Finally, otorrhœa may be occasioned by malignant disease of the petrous portion of the temporal bone itself, of a most remarkable case of which I have been most kindly furnished with the particulars by Mr. Cusack:—

An apparently healthy boy, seven years of age, was brought to him on account of a discharge from one of the external meati. Upon examination, a small polypus was discovered in the passage; this was removed, but on the third day following it was found to have grown as large as ever; it was again repeatedly removed

even to the third or fourth time, and the usual slightly astringent washes were had recourse to in the interim. This polypus or fungous growth did not present any thing remarkable except the extraordinary power of being re-produced in a day or two, on which account it was no longer attempted to be destroyed, but a more palliative mode of treatment was had recourse to. Not long after, the child was suddenly seized with an epileptic fit; and then, on closely examining the ear, a fluctuating point, was discovered over the mastoid process; this was instantly cut down upon, and the opening gave exit to a large discharge of pus. It was then found that the cavity which contained this matter communicated by a fistulous opening with the external auditory tube;—a fungous mass almost immediately spouted through the incision; the parts in front and all round the ear became swollen, and had that peculiar *boggy* feel to the touch, so as to leave but little doubt regarding the malignant nature of the disease. The original aural polypus remained almost in *statu quo*, but, from the struggles of the child and the condition of the parts, at no one period was it possible to learn with accuracy the state of the tympanum. Repeated attacks of epilepsy, each increasing in violence, and the interval shortening in duration, followed quick upon this deplorable condition, and death soon closed the scene.

Upon examination it was discovered to be a well-marked case of osteosarcoma of the petrous and mastoid portions of the temporal bone. The petrous portion in particular was enormously enlarged, and so softened as to be capable of being cut with a knife. The whole presented a large fungous mass, which, however, did not engage that portion of the brain which lay upon it. All traces of the internal ear had been obliterated. There can, I think, be little doubt, but that in this case the original disease was seated in the bone, and that the aural discharge and fungus were but secondary morbid appearances. Instances of cancer and fungus hæmatodes, or medullary sarcoma, have been recorded by writers as a cause of aural discharges.

This case of Mr. Cusack's, and the foregoing instances of disease of the bony case of the ear, which I have selected out of many, from their being so recently within the recollection of the members of the Pathological Society, and because I have had opportunities of examining the preparations myself, lead us to two questions of vital importance in the consideration of otorrhœa. One is as to our *diagnosis*, the other as to the *morbid changes* in the ear to which long-neglected discharges may lead.

With regard to the first: our diagnosis should always be cautious, unless, indeed, we see our way very clearly through the case, and for this reason—that from what I have observed of this disease, *so long as otorrhœa is present we never can tell how, when, or where it will end, or what it may lead to.* For this very cause, if no other or better existed, the old doctrine of “letting alone,” or “leaving to nature” such affections, should be exploded, and by every means in our power we should endeavour to heal them.

Before I proceed to speak of the morbid changes that take place in the ear on account of neglected otorrhœa,* on chronic otitis, I would make a brief digression in order to explain the appearances presented by the meatus and membrana tympani in a healthy living ear.

The external auditory passage (*meatus auditorius externus*) formed of the auditory processes of the temporal bone, the strong fibrous membrane, which in part connects it with the cartilaginous portion of the tube, and the cartilage itself, is an irregularly curved tube, opening externally into the concha, and internally closed by the membrana tympani. Its transverse section is, for the most part, of an oval form; but it varies in character, size, and anatomical construction every quarter of an inch in its length, which likewise varies in different individuals.

* I have retained the term “otorrhœa” throughout this essay in preference to “chronic otitis,” as that symptom is caused by so many affections that would not come under the head of chronic otitis.

The several curves, dilatations, and contractions which this portion of the auditory apparatus presents, and which are described in most anatomical works, are best shown by means of a fusible metal cast, as, from the enlargement toward the tympanal extremity of the tube, it is with difficulty that plaster of Paris can be got out unbroken ;—with these curves, however, it is not my present intention to deal. The varieties and peculiarities of the anatomical structures that enter into this tube it is, which gives rise to the diversity and the peculiarities of the pathological appearances which it presents.

Immediately at the external orifice where the concha sinks into the outer oval aperture we have the passage formed almost entirely of pure fibro-cartilage covered with its perichondrium, and the fine dermal structure of the general investment of the auricle. Here the skin is studded over with fine white hairs pointing inwards, and also numerous sebaceous glands or follicles ; it is here also more loosely connected to the cartilage than at any other part of the tube ; and this accounts for the reason that circumscribed inflammations ending in small abscesses, occur more frequently in this portion of the canal. These abscesses are, in the great majority of instances, seated in the floor or the posterior wall of this part, and the dense nature of the integument here explains to us the cause of the pain experienced, and the slowness of their opening, if left to themselves. Phlegmonous and erysipelatous inflammations chiefly attack this part of the tube ; but rarely becomes a muco-secreting surface.

The next portion of the fibro-cartilaginous part of the tube may, with justness, be denominated the glandular division, because in it are seated the ceruminous glands that secrete the ear-wax ; it is about three-eighths of an inch long, and is also the narrowest portion of the tube. Less cartilage and more dense fibrous structure enters into its walls than the foregoing division, and in it, the dermal structure becomes finer, and the ceruminous follicles and the hairs much fewer. In a healthy state, when examined with a speculum in the living subject, it is

generally coated over with cerumen, which just here forms a kind of ring in the passage ; this ring is thickest and hardest posteriorly and on the floor, while anteriorly and above it is much more scanty. On the introduction of a speculum, or touching with any instrument this portion of the tube, many persons complain of a tickling sensation in the throat, which causes coughing ; while the same irritation of the lining of the next or bony part of the meatus, will often excite the lacrymal gland of the eye on that side. My attention has been particularly called to this division of the meatus, from its being, in ten cases out of a dozen, the seat of polypous excrescences ; and of these ten cases, in eight instances, such will be found to grow from the posterior wall of this part of the external auditory tube. On my mentioning this circumstance to my distinguished colleague, Dr. Carlile, he at once concluded that these vegetations or morbid growths proceeded from the ceruminous glands, as we know similar growths take place in like structures elsewhere. I have before me a very beautiful dissection of Dr. C.'s, which exhibits the exact position of these glands, and which I would have here represented, but that a similar display will be found figured by Arnold, in his magnificent lithographic "*Tabulæ Anatomicæ*" of the organs of sense. These glands chiefly occupy the posterior face of this part of the canal, where it is mostly formed of fibrous membrane, and run upwards over the vaginal process of the osseous portion of it, forming an irregular circle in the tube, not unlike a stone or signet ring with the broad part posteriorly.

Arnold has represented these glands both separately and *in situ* in the horizontal section of the meatus. (*Fasciculus II. Tabula V. Figuræ 13 et 17*).

In shape these bodies resemble so many Florence flasks, opening by their long narrow mouths upon the surface of the passage ; while the sebaceous follicles are of a globular form, with larger and much shorter necks, and lie much more superficial than the ceruminous glands. This glandular division of the canal, much more frequently than the external, but less so than the next or internal or bony portion, degenerates into a

mucous or muco-purulent secreting surface ; abscesses rarely form in it ; but vesications, herpetic eruptions, and other cuticular affections are generally seated in this part.

The next portion of the meatus is the dilated, partly osseous and partly fibrous division, closed internally by the membrana tympani with which I will now describe it, chiefly as it presents upon examination with a tubular speculum in the living subject. In a healthy state the lining of this part of the auditory canal, which is very intimately united to the bone and other parts on which it rests, exhibits a fine, smooth, dry, and pearly-white, shining appearance, similar to that of the tympanal membrane, with the external layer of which it is continuous. In a perfectly normal ear *it is never coated with wax* ; but in inflammation it becomes thickened, pulpy, and highly vascular. This portion, like the membrana tympani itself, is highly sensible to the touch, and, from its intimate connexion with the bone, no doubt, is one of the chief seats of pain in otitis.

In otorrhœa it becomes a purely mucous surface, but it rarely throws out granulations to any extent. Sometimes I have found small fungi growing from its upper and posterior face, in the cavity marked underneath the origin of the zigoma, where a portion of the fibro-glandular division dips into this part, and again in a minor depression, just external to the posterior attachment of the membrana tympani. In two cases of young children I have seen the process of caries commence in this latter spot, and the first indication of mischief going forward was the casting off of the posterior bony wall, or vaginal process of the temporal bone. Although subject to slight superficial ulceration like apthæ, diseases of the skin do not attack this part so frequently or severely as the two other portions.

Having thus far advanced into the passage, the appearance of the membrana tympani, as seen in *life* by means of the speculum, next claims our attention. This thin oval membrane presents, upon its external surface, much the same characters as the lining of the osseous portion of the tube, being a greyish-white, dry, diaphanous, or semitransparent membrane, obliquely fill-

ing up the inner extremity of the meatus auditorius externus, which it partitions off from the cavity of the tympanum. Within it, is seen the manubrium of the malleus, proceeding from above downwards, and slightly forwards, and not, as is generally stated in books, backwards. This bone, which runs about half way across the membrane, divides it into a superior and inferior portion; both, however, totally distinct from the small purse-like projection of fibro-mucous membrane placed behind the tubercle of the malleus, and which Mr. Sharpnell has described under the name of “*membrana flaccida*,” a structure, it seems to me, rudimentary in man, but well developed in some of the lower animals, the sheep in particular. The anterior and posterior divisions of the true *membrana tympani*, as separated by the malleus, are of different curves and degrees of tensility, and the *whole* membrane of the tympanum does not, as I believe,¹ and shall demonstrate at a future period, form a concavity on its external aspect, but its upper, or anterior portion, is flat, or slightly concave; while that part below and behind the malleus is, in a perfectly healthy *living* human ear, *convex* toward the external aperture. This lower portion is also more glistening in appearance than the upper or anterior part, and when viewed through the speculum a bright spot of light shines upon its most convex portion, which is a little below and behind the point of the malleus. This peculiar curve of the tympanal membrane I have again and again demonstrated to several members of the profession, and any deviation from this form causes what may be denominated *short hearing*. I believe the general external concavity ascribed to the *membrana tympani* by anatomical writers is a post mortem appearance. The *membrana tympani* is subject to inflammation and all its consequences, as I have already explained at page 402. In otorrhœa it frequently becomes vascular, villous, and then granular, —a mucous, and even purulent, secreting surface, like a pannus; but I have never seen an instance of polypus or fungus growing from its surface or its margin. This is an opinion at variance with many eminent authorities, and the contrary is one of most popular

acceptation I am aware, but nevertheless it is one confirmed, as far as negative proof can avail, by the experience of a numerous assemblage of cases. The two portions of this membrane, the flat and flaccid upper part, and the tense, convex, lower section, are differently affected by disease. Where rupture of the tympanal membrane takes place from accident, as it sometimes does from cannon shots, or other over-loud noises, or, as I very lately knew it to do, in the case of an old lady residing in Dawson-street, by merely blowing the nose, I have invariably remarked that it is the lower tense part; while the upper part, or that anterior to the hammer bone, is the one most usually affected by ulceration, and that in which perforation most commonly takes place in chronic otitis and otorrhœa.

Twice during the past year I had opportunities of seeing an abscess in the layers of the membrana tympani; in both they were circumscribed, about the size of a grain of No. 6 or 7 shot, and in one instance, when I punctured it with a cataract needle, a drop of thick pus oozed out. Of the thickening of this membrane I have already spoken. I have in three instances seen earthy deposits between the layers of the membrane, like those which are found in the heart and arteries and the cornea, they were irregular in shape, occupied about one-half of the tense portion of the membrane, and afforded a gritty feel when touched with a sharp instrument. In each case severe deafness existed in that ear. In one of these cases, Lady B., I pointed out this peculiar morbid deposit to Sir H. Marsh about eight months ago. Skin diseases, extending over the tympanal membrane, are of frequent occurrence; and many other effects of inflammation in this membrane are enumerated under the head of the consequences of otorrhœa, at the conclusion of this paper.

With regard to the treatment of otorrhœa, it is scarcely necessary, after what has been already advanced upon the subject, to state, that our first step must be to examine minutely the condition of the external auditory canal, by syringing out the part with tepid water, and then submitting every portion of it to

the action of strong light by means of the tubular speculum. In the early stage, and the mildest form of this complaint, all that we may be able to discover is a vascular, slimy condition of the lining of the whole tube and external layer of the membrane of the drum, which is thickened and opaque, and having almost invariably a fasciculus of red vesicles coursing along the line of the malleus.

In the state of simple otorrhœa, I generally paint over the surface with a solution of nitrate of silver, the strength of ten grains to the ounce, applied with a fine camel's hair pencil, which I find far preferable to the old practice of dropping in the solution; first, because by thus rubbing it on the parts, some more and some less, according to their condition, it removes a quantity of the mucous discharge which adheres with great tenacity, and thereby makes its effect more certain; secondly, it may be required only to one particular spot; and thirdly, by this method the concha, external parts, and, as it sometimes happens, the dress also, are not blackened by it. This application is repeated about every third day, and, in the mean time, the ear is syringed night and morning, and even oftener if the discharge accumulates, with plain tepid water, and a gum elastic bag, which, when used by friends, or attendants, or the patient, is much preferable to the usual piston syringe;* and at night a slightly astringent lotion is dropped into the ear till it fills up the meatus, allowed to remain there for a few minutes, and then let run out.

The various salts which enter into the general composition of eye collyria are here particularly applicable, especially those of lead, zinc, and copper. I generally prefer the former, either in the state of acetate of lead, from eight to twenty grains to the ounce, or what is a much more elegant preparation, *Liq. Plumbi Diacet. ʒi. et Aqua Rosarum ʒi.*; I do not think the present officinal solution of lead is as good or efficient a preparation as the "Extract of Lytharge," of the old pharmacopœias.

* Mr. Robertson of 15, Jervis-street, is always provided with these.

When zinc or copper is employed, the preparations I find most suited are the *Liq. Aluminis Comp.* and the *Aquæ Sappherinæ*, or *Liq. Cupri Ammonio-sulphatis*, in like proportions with the lead lotions. Where the discharge is fœtid, the chloride of lime lotion used in the morning is of use, being slightly astringent, and getting rid of the disagreeable smell.

With regard to cleanliness, or, in other words, to syringing, so very much depends upon it, that the surgeon never can sufficiently impress its importance upon the patient or the attendants. In simple mucous discharge without polypus, granulations, or affections of the deep-seated structures, it is the chief part of the treatment; and yet how difficult to have it performed regularly! Allowing the discharge to accumulate in the meatus is undoubtedly one of the principal causes that perpetuates otorrhœa in any of its forms. When the meatus becomes a secreting cavity it in many respects resembles a fistula, and the longer it has existed the more difficult it is to heal; and this, its fistulous character, it is, which, especially in a narrow meatus, promotes the continuance of a slight thin discharge, even long after the granulations or other producing causes have been removed. The action of the external air, therefore, upon this secreting surface, similar to what it experienced in health, can never be too much observed. Towards the contrary, however, there is a very general prejudice, for in two-thirds of the cases of otorrhœa which I am called on to treat, I find the orifice of the meatus filled full of cotton, or from some supposed virtue in its colour, black wool, which, if treatment be employed, is invariably returned after each syringing. During the summer, I was consulted on account of a discharge from the ears of Master C., æt. 3½. It was then of two years' standing, and was thin and whey-like. He had been under medical treatment during the entire disease; generally made use of syringing, and an astringent wash; never ceased to take tonic mixtures and aperient powders, and had been twice at the sea. On examination, I found the auditory passages converted into secreting cavities, but without fungus, gra-

nulations, or caries, and with the tympanal membrane still perfect, but I learned that he had worn plugs of raw cotton ever since the discharge commenced, and these were only removed once in every two days in order to syringe and apply the lotion! By removing the plugs, syringing twice a day, and continuing the same astringent applications, the child was well in a month. It is scarcely necessary to add, that the moment the ear passage becomes a muco or muco-purulent secreting surface all traces of cerumen vanish, and it is not in the generality of cases for months after the discharge has ceased that the wax is restored to a natural state.

With respect to the nature of the discharge, I have already spoken, and there is now, as has been shown by the experiments of Professor Hänle, little or no microscopic distinction between the pus and mucus secreted from mucous surfaces; and in the same case it will vary in character several times in a month, according to the intensity of the inflammation. The colour and smell have been relied upon as a means of diagnosis by several writers. As far as my observations of this disease extend, I do not find either in accordance with the rules laid down in books; for although when caries of the bone exists the discharge is generally both dark coloured and foetid, I meet many cases in which both these characters are present without any exposure of the bone, and particularly when the tympanal membrane has become perforated; but it may exist even without this destruction of substance.

With regard to general treatment, a very remarkable difference seems to exist in this country in relation to the management of the diseases of the eye and ear; that of the former being, I respectfully suggest, of too local a nature, while that of the latter is almost exclusively constitutional. How frequently will we see a pustular or rheumatic ophthalmia with a foul, white, loaded tongue treated by an astringent lotion, dropped into the eye?—while a case of otorrhœa, without any derangement of the digestive functions or general health, is recommended tonics sea-beathing, blistering, and an issue in the arm.

Notwithstanding that otorrhœa of long standing is reputed to be entirely a constitutional affection, I have seldom occasion to prescribe any general alterative or tonic medicine, unless in cases of marked strumous habit, and when the glands of the neck are diseased likewise. With regard to "drains" and counter-irritation, I occasionally insert an issue in the arm, sometimes to meet the prejudices of the friends or the medical attendants, and sometimes where cases occur that of themselves warrant such a precaution, for instance, where disease of the brain had appeared in other members of the family, or that the aural discharge had broke out on the subsidence of disease of the skin or any vicarious outlet, or that the child had had convulsions in infancy, &c. &c.; but these are the exceptions to the rule.

Towards the close of an otorrhœa from simple chronic otitis, especially in children, I have frequently remarked, that they are liable to slight fresh attacks of otalgia, and sometimes small abscesses form round the mouth of the meatus. These are, I believe, best warded off by the application of a vesicating liniment behind the ears on the mastoid process, and keeping up this gentle counter-irritation for some little time after the otorrhœa has ceased. For this purpose the croton oil dissolved in soap liniment; or the tincture of iodine, made stronger and more soluble by the addition of a little hydriodate of potash and the *Acetum Lyttæ*, answers very well.

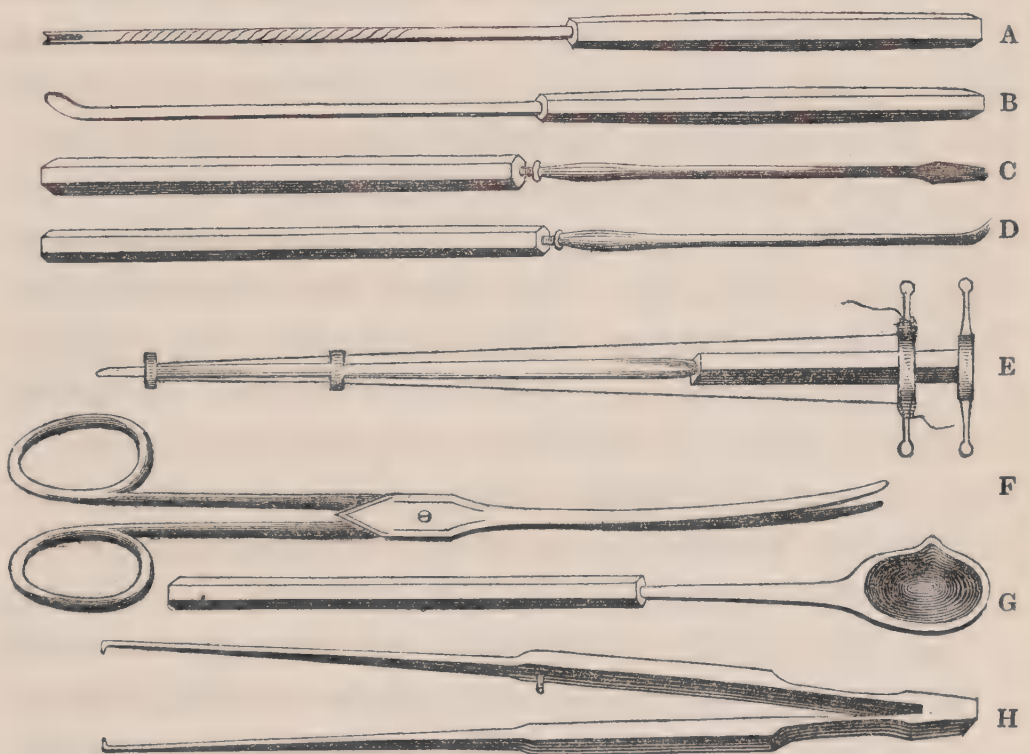
When an otorrhœa, of long standing, from whatever cause it has arisen, is just ceasing, either of itself or the result of treatment, I have found, in a great number of cases, that the dermal lining of the auditory canal becomes enormously thickened; and the cuticle, which is now redeveloped, and of a white colour, very like the appearance of the hands when long exposed to the action of hot water, as in washing, is thrown off in patches, and often fills up the passage completely. Such was the condition, and such the *stage* of the disease presented in the case of an officer who had been affected with an otorrhœa from his childhood, de-

scribed by Mr. Earle in the tenth volume of the Medico-Chirurgical Transactions. To that case, so admirably described, and so judiciously treated, I would refer my readers, as a type of the mode in which simple chronic otitis ends. Such a case need not, in the present improved state of aural surgery, require such lengthened treatment. After syringing the ear well, all the thickened cuticle that remains may be easily removed through the speculum with the little silver spatula and the long forceps marked В and Н in the opposite wood-cut; the parts may then be touched with a solution of lunar caustic, and when the discharge has ceased, and the cuticle become thinner and less white, the cure may be completed by the application of Ung. Hydrarg. Nit. Dil., laid on warm with a camel's hair brush.

The complications that render otorrhœa at all times tedious, but now difficult to heal, are morbid vascular growths; of these, granulations covering over the face of the membrana tympani are a frequent cause. In such a case the bottom of the auditory tube will appear as red and vascular as a granular eyelid, and it becomes an object of interest to know whether it is the surface of the membrane or the inner wall of the tympanum that we see. A simple inspection, by means of a strong light, will generally determine this, for although the greater portion of the membrane of the tympanum may be destroyed, and even the incus or orbicular bone has been cast off, still the malleus in the great majority of instances remains. A fine probe fitted into a handle will often by one touch determine whether we are percussing a thickened membrane on the promontory of the middle ear;—making the patient press the air through the ear, by holding his nose and shutting his mouth, and then making a forced expiration; or again, by the fluid of the injection passing into the throat, we may judge of the perforated condition of the membrane. But as it often occurs in otorrhœa, or where the cavity of the tympanum is exposed, that the Eustachian tube is likewise blocked up with granulations, or closed by inflammation, those two latter methods are not always applicable. In the latter

case, injecting fluids through the Eustachian tube is likewise inapplicable. In most instances, however, the practised eye can at once determine the condition of the parts. Many persons who have moderate sized apertures in their tympanal membranes can, by pressing the air through the Eustachian tube, produce a whistling noise.

Wherever the granulations grow from, whether from the membrane itself or from the walls of the tympanum, the means I find most useful for their eradication is the solid nitrate of silver rubbed over the part about every second day, or oftener if necessary, and for this purpose I have for some time past employed the little instrument marked A, and represented in the accompanying wood-cut :



This and all the other instruments here figured, except the scissors and forceps, are five and a-half inches long : it consists of a silver tube cut spirally for three-fifths of its length, and having an aperture in the side near the extremity. In using this *port-caustic*, a little nitrate of silver is melted over a lamp, in the small

platina ladle (fig. G), and then, when about cooling, the end of the *port-caustic* is dipped into it till the aperture and extremity are filled and coated over with the caustic. The elastic spring of this instrument, while it prevents any injury to the ear, from the starting of the patient, can also be bent, so as to be applied with ease on any part of the auditory canal, and the caustic can in this way be reduced to a finer point, and made more secure, than by any attempt at fixing in, a portion of the solid material. The caustic should be rubbed over the part about once in every two days, and in the mean time the syringing, the astringent lotions and other applications recommended in the treatment of simple otorrhœa, from chronic otitis, should be strictly enforced.

Three cases of this description have just left my care cured. Two of these were little girls, one aged eight, the other six; in both, the discharge appeared on the subsidence of scarlatina three years and a quarter ago, and continued without intermission ever since, occasionally increasing in quantity and consistence, after attacks of pain, to which they were subject on catching the slightest cold. I was consulted for both cases the same day, now nearly three months ago. The hearing was considerably impaired, the otorrhœa was double in both cases; the discharge profuse, highly foetid, and in one instance sanious. In general health, both were to all appearance well, and both had gone the usual round of sea-bathing, country air, aperients, tonics, &c. In both, the apertures of the meati were thickened, and the conchæ crusted and excoriated by the discharge. In both, the passage was free from excrescence, and although the lining membrane was turned into a muco-purulent secreting surface, the bony case of the ear and mastoid process appeared sound. Both tympanal membranes in both children were red, vascular, villous, and in part granular. The nitrate of silver was applied in substance with the *post-caustic* to the membranes of these children, till it completely whitened the surface, and repeated every fourth day for the first month, then once a week, and

latterly the solution has been applied with the brush occasionally. In the meantime strict attention has been paid to having them syringed twice a day ; for strange to say, although they are in the upper walks of life, the most that was ever done was to soak up the discharge with the towel when it became offensive. At night dropping in the lead lotion,—never allowing the discharge to accumulate,—taking plenty of open air exercise, making use of a nutritious diet, and taking occasionally, particularly when any pain was felt in the ear, a few grains of the “grey powder,” (Hydr. c. Creta), with a little rhubarb. After the second application of the caustic, the running was checked, its consistence then became thicker, more ropy and mucous, less purulent, and greener in colour. Hearing daily improved, but toward the end of the sixth week, when the discharge had nearly ceased entirely, both these children were attacked with pain in one ear, and a slight increase of thin, watery discharge. A leech applied over the tragus of each ear, and the use of the aperient powder, soon afforded relief. In one of these children the skin of the meati became affected in the manner I have described at p. 427, but both are now perfectly well ; the membrana tympani is, it is true, white and thickened, but the hearing is in both nearly as good as ever it was before the attack of scarlatina. In one of these girls, touching the membrana tympani with even a hair pencil, always brought on a violent fit of coughing.

In connexion with the subject of impressions made upon the ear by contact, I may remark, that the nitrate of silver is often tasted in the mouth by persons to whose tympanal membrane it is applied ; and one young lady in particular, now under my care for a small excrescence growing through a perforated tympanal membrane where the malleus still remains *in situ*, tells me that she invariably “feels the impression of the caustic running down along that side of her tongue, but never reaching the tip.” Here, in all probability, the corda tympani nerve is exposed. She likewise experiences, in an unpleasantly acute manner, on

the most trifling cause, the sensation commonly denominated "setting the teeth on edge."

Mr. F. A., æt. 20, applied for advice to Sir H. Marsh in July last for profuse otorrhœa, chiefly affecting one ear, but occasionally occurring in both; hearing impaired, but not troubled with tinnitus aurium, which, by the way, I may remark, is a most irregular symptom in this disease, and much less frequently present than we would *à priori* be led to expect. When I first saw him with Sir Henry the discharge was profuse, but not very foetid nor discoloured. On examination, I found in one ear the surface of the tympanal membrane and part of the auditory canal coated over with a thick caseous substance, mixed with flakes of thickened cuticle. This was the good ear, in which the discharge appeared only occasionally. On removing this, and painting the surface of the meatus and membrane of the tympanum, which was sound but thickened and opaque, with a solution of caustic, and from time to time afterwards applying the warm dilute citrine ointment, no further trouble was experienced in this ear. In the other, however, that from which the discharge chiefly proceeded, I found the membrana tympani in a state resembling pannus, or the section of a piece of muscle, and, in addition, a small polypus or fungous growth was attached to the posterior wall of the glandular portion of the meatus. This was removed, and both its point of attachment and the granular surface of the tympanal membrane touched with the solid nitrate of silver. In all other respects the local treatment was similar to that employed with the two preceding cases, and no internal remedies of any kind were administered. He is now perfectly well, all discharge ceased, and hearing is restored. I insist on seeing him still once a week, and although the membrana tympani is nearly white, and all its vascularity gone, I still continue to apply the caustic solution. This caution is absolutely necessary, as no disease is more apt to relapse than aural discharge of long standing. In the account which he wrote me of his case I find the following remarks, the latter part of which I can only ac-

count for by supposing that he sometimes had internal otorrhœa in addition to the external discharge, for the membrane of the drum is still imperforate.

“ I think the discharge from the ear commenced after a severe illness, about nine or ten years ago, and has continued since with little intermission. I was always told that I would grow out of it, that it would go away of itself. The only remedy I tried was a blister, and bathing them with milk and water, which did no good. The discharge was more frequent in wet than dry weather. It generally stopped about six in the evening, which caused a rumbling and an unpleasant noise in the ears. They ran generally in bed, and in cold and frosty mornings there was often a hard crust formed in the ears, which made them very painful. In blowing the nose, or using any violence towards them, it sent the *taste* of the discharge into my mouth ; but this was seldom. When my ears were very bad, I think it caused a watery and itching pain in my eyes, but it seldom continued long.”

Instances of this kind might be multiplied without end. That they will not heal up with syringing and the mere use of astringent washes I have long since learned, from the number of like cases of granular tympani occurring in the dispensary, in which, where so many persons were to be attended to, and where the light did not always favour, it was not possible to apply the caustic ; such cases would not, however, heal till they were examined in the way I have already described, and had the solid nitrate of silver applied, although they had been using lotions of various kinds for months before.

The last cause and complication of otorrhœa is what I have throughout this paper denominated polypus. Fleshy, pedunculated, morbid growths in the ear, nearly colourless, having a thin cuticular covering, unattended by pain, not appearing as the result of inflammation, and unaccompanied by discharge, I have seen, but such cases, in comparison with those to

which I have so frequently alluded, and am now about to describe in detail, are extremely rare. Throughout this essay I have constantly employed the terms fungus and polypus as indicative of those morbid growths, the product of inflammatory action and long continued otorrhœa. By fungus, however, I particularly allude to those vascular and granular masses which generally grow either from diseased bone, or upon the destruction, in whole or in part, of the membrana tympani, and whose attachments are to be found principally in the very bottom of the auditory passage; while polypi are, for the most part, confined to the glandulo-ceruminous portion of the tube, and are attached by narrower roots than the fungi.

It is stated in books that polypi are smooth on their surface, while fungi are lobulated. Here, however, is a very good specimen of a polypus removed from the posterior wall of the



glandular portion of the meatus presenting such characters. In many instances polypi may be co-existing with granular tympani or fungous masses proceeding from the middle ear. Generally the polypus grows more externally, that is, appears at the external orifice,

while the fungus is mostly confined to the bottom of the tube. The latter may, however, appear externally, as we learn from the following instance. About a year ago I met Dr. Corrigan in consultation upon the case of Master L., a most intelligent boy, of seven years of age, who was affected with considerable deafness, and extremely profuse, thin, fœtid, dark-coloured discharge in both ears almost from his infancy. The quantity of matter that ran out of this young gentleman's ears, especially at night, was quite incredible. I at first feared disease of the bone, but the contrary has fortunately turned out the fact. On clearing away the discharge, a dark coloured, highly vascular fungous mass was found completely filling up the middle of both meati, which were extremely thickened and narrowed. These had at first sight the appearance of polypi; but upon closer examination with the speculum and a fine probe, I could not find that

they grew from any particular part of the wall of the canal, but appeared to proceed from the membrana tympani.

The nitrate of silver, in substance, was applied to these growths about once in every four days for upwards of six months, till they were completely reduced to the level of the tympanal membrane, which was found to have a large perforation in its centre on both sides, through which the fluid injected passed into the pharynx. At this period the discharge considerably lessened, and the power of hearing very much increased; upon examination with the speculum, the auditory canal still presented a whitish thickened appearance, and the membrana tympani, with the aperture in its upper or anterior section, was still red and villous; from this forward the use of the solid caustic was omitted, and the solution was applied instead, in the manner which I have described in similar cases; while lead and chloride of lime washes, with constant syringing, were never omitted. I see this young gentleman occasionally; hearing is now nearly restored, but, chiefly owing to the negligence of the attendants, who sometimes forget to syringe his ear for three days together, the discharge has not entirely ceased; yet, even after such an interval of cleanliness, it never amounts to more than the filling up of the meatus. It was remarkable that at times the discharge from this lad's ears was almost black, although the caustic had not been used for days before.

For the removal of polypi and other fungous growth, various mechanical means have been devised in the shape of forceps and ligatures, &c. Without entering into a historical description of all these, it is enough to remark, that they were insufficient for the purposes for which they were invented; the former, owing to the brittleness and vascularity of the substance they were intended to grasp, and the latter from the difficulty of applying them with accuracy to the root or foot-stalk of the morbid growth. I remember, when a student, that my esteemed preceptor, the late Dr. Abraham Colles, used a little noose of silver wire, which, when the polypus appeared externally, he

slipped over it, and pressing it as far down as possible, plucked it out of the meatus; but as the subsequent treatment of the hospital patients thus affected, generally fell to my lot, and as we never were able to discover from what part these morbid growths took their attachment, I almost invariably observed that they returned in a very short period afterwards. The little instruments which I have employed for the removal of polypi and excrescences out of the meatus, are represented by figures C, D, E and F of the foregoing wood-cut, page 429.

Our first object must be to obtain as accurate a knowledge as possible of the particular point from which the morbid growth proceeds; when, as is sometimes the case, if they are of small size, globular form, and not very deeply seated within the meatus, they can frequently be removed with the long curved scissors represented in figure F, half an inch of the points of which alone are cutting, and the whole of which measures five inches; or the small double edged knife, figure C; or the curved one, figure D, all of which, as well as the toothed forceps, figure H, when the growth is of small size and fully exposed, can be used with freedom and effect through the tubular speculum.

The instrument of greatest value for the removal of aural polypus from any portion of the meatus, is the small snare-like apparatus represented by figure E, consisting of a fine steel stem, five inches in length, with a moveable bar sliding on the square portion towards the handle; in a properly constructed instrument the small upper extremity, flattened out and perforated with holes running parallel with the stem, should not exceed the fourteenth of an inch in its greatest diameter.* A fine silver, or what is much better, from its greater flexibility and strength, a fine platina wire, with its extremities fastened to the cross bar at the handle, passes through the holes in the flattened end of the small extremity of the instrument, and allowed to be of such a length, as, that

* The instrument represented at p. 429, is in every respect too large, particularly at its point.

when the bar is drawn back close to the handle, this ligature is put fully on the stretch, and drawn tight through the holes at the small extremity. In using it, the cross bar is pushed forward and a noose made of the wire at the small extremity, of sufficient size to include the morbid growth, which it is then made to surround, and toward the root of which it is pressed by means of the stem; the cross bar is then drawn up smartly to the handle, and it never fails of either cutting across or of drawing with it whatever was included in the noose. Some bleeding generally follows, which should be allowed to subside, then syringe the parts with slightly tepid water, and again examine the ear, and if possible discover what portion of the polypus may remain, which, whether it may be the mere point of attachment, or a portion inaccessible to instruments, should be invariably touched with the armed *port caustic*, and the same application applied from day to day until all traces of the morbid growth is vanished. Unless this latter point of practice be strictly and perseveringly adhered to, it is in vain that we can expect a total eradication of the disease; no more, however, of the auditory apparatus should be submitted to the action of the caustic than the actually vascular, granulating, or fungous surface. I have frequently witnessed the whole canal in a state of ulceration, and an erysipelatous inflammation extending over the entire auricle, from a large stick of lunar caustic having been inserted into, and rolled round in the meatus to remove a polypus or fungous growth, the eradication of which had already been frequently attempted by instruments; a practice as cruel as it was ineffectual.

The little instrument which I have represented in the wood-cut, and just detailed, and which may be denominated a Snare, will be found useful in other parts as well as the ear. For the principle of it we are indebted to Mr. William Robertson, one of the surgeons to the Kelso Dispensary, who published a drawing and a description of such an instrument, "*for extracting polypi from the nose,*" in the "Edinburgh Medical and Surgi-

cal," for 1805 ; and it was first introduced into practice in this country two years afterwards by my friend Dr. Little, now surgeon to the Sligo Infirmary. Mr. Robertson never applied it to the purposes of aural surgery, for which his apparatus was far too large ; but he certainly deserves the credit of the originality of the invention. It has now been in general use for some time past in this city for the removal of nasal polypi, for which it is most admirably adopted.

I may remark, *en passant*, that I have in two or three instances observed the "membrana flaccida" above the tubercle of the malleus assume all the characters of polypus, being red, swelled, vascular, and suppurative ; but in no instance have I seen a polypus attached to the membrana tympani.

Without multiplying cases of fungi and aural polypi, the result of chronic inflammation and otorrhœa, let the following interesting and protracted one serve to illustrate this most unpleasant and harassing disease. Mr. L. M., æt. 24, applied to me in the latter end of last April, with double otorrhœa, large polypi, fungous excrescences, ulceration of the lining of the canal, erysipelatous inflammation around the external orifice, and profuse purulent discharge, highly foetid and at times sanguineous ; hearing in both ears very defective, countenance sallow and anxious, with a quick pulse, hot dry skin, loaded tongue, and general health very much impaired. In October last he kindly furnished me with the following graphic history of the origin and progress of his complaint. " The first time that I felt any affection in my ears was in the month of December, 1825. I was, whilst at school during the Christmas examinations, attacked with a severe pain in one of my ears, accompanied by a considerable discharge of liquid matter. From this pain I got very speedy relief, from drops poured into my ear by an apothecary. I recollect nothing more of this attack—indeed I believe the pain was altogether removed by the drops, and with it, all effects were supposed to have vanished ; but I remember that I did not again go to school that winter in consequence of delicacy of

health, which continued until the approach of the following summer.

“ I do not remember anything particular with regard to my ears or general health from the period I have been speaking of—1825–26 down to 1830—except that of frequent discharges of *lumps* of *wax* from both my ears. In 1830 I can again fix the date with accuracy. There was a very considerable discharge of liquid matter from both my ears, such as you saw when I first visited you, and which continued from that time until relieved by you last summer. Indeed there was one circumstance which would lead me to think that the discharge must have been greater at the period of which I am writing (1830) than at any future time—for then, I could not keep the flies from the discharge, and used to amuse myself killing them in my ears, a practice I became most expert at ; but probably this may be accounted for in another way, that as I grew up I was more particular in wiping the matter away from my ears. About this time my mother died, and perhaps to that misfortune I may attribute the additional one of not having got earlier medical advice, for the state of my ears or the discharge, great as it was, was not observed by the family, and I never spoke of it myself until the year 1836, when I began to feel a defect in my hearing. I was then brought to Surgeon A., who directed me to apply to my ears some thick oily drops which he prescribed, and said the disease was *constitutional*, and that particular attention should be paid to my general health. Some months after this Messrs. A. and B. met in consultation upon my case ; and they both concurred in opinion with the advice previously given by Mr. A., and stated that no operation or instrument could be had recourse to in my present state.

“ I did not experience any beneficial effects from this advice, and both my father and myself began to lose confidence in all medical treatment ; bnt in a few months after we consulted Mr. C. He pulled out some (very little) of a polypus with a pincers, and with very great pain to me ; however, he said the flesh was

too soft, and he was not able to get a grip of it with the instrument, and had to give it up. He then applied caustic, and directed the apothecary to touch it every day with red precipitate.

“ If Messrs. A. and B. had cause to complain of their medicines not having got a sufficient trial, or sufficient time not having been given to show their effects, certainly Mr. C. could not reasonably make any such complaint, for I remained a long time under his treatment, and all through implicitly obeyed his directions; all the pain I suffered (and *you* know I would not lightly complain) from the application of that red powder, made me almost weary of my existence. However, I did not recover under Mr. C., and then I tried an eminent London Surgeon, Mr. D. He used nothing but the stick caustic, and I remained with him until he dismissed me as cured, merely giving me an ointment to be melted on a card and poured into my ears every night” (composed of alum and red precipitate). “ This I did with great regularity; but in spite of my exertions the polypus again made its appearance, and with it, the discharge returned. After this I returned to Dublin, and consulted a fourth Doctor, Mr. E., who also used the stick caustic, with about the same success as Mr. D.; but so soon as I would discontinue my attendance, so soon would the polypus again make its appearance. From neither of them, nor from any of the remedies I had yet employed, did I perceive the slightest improvement in my hearing. It was not so bad then as it subsequently became, and I stated to each of them that I would be perfectly satisfied if they would prevent me from getting worse. This none of them accomplished. Surgeons D. and E. succeeded better than the others in reducing the discharge; but the relief they afforded was but temporary.

“ For about ten or twelve months before I consulted you, in the month of April last, I had altogether neglected my ears—in fact my patience was worn out, and my hearing became very much worse than it had ever been.

“ In the month of March last I got a very heavy cold, which fell upon my ears, accompanied by a bad sore throat. During my illness I was attended by my friend, Mr. F., and on my recovery he recommended me to place myself again under the care of some medical man on account of my ears. I accordingly again consulted Mr. B., who now applied the snare, and after several attempts took out a considerable piece of the polypus, but not at all so much as you subsequently took out at a single pull ; he likewise used caustic with my ear, and desired the stick caustic to be applied by the apothecary each day I did not visit him, by inserting it as far as possible into the hole of my ear.”

During the first few days that this gentleman was under my care, I removed large masses of the fungoid growth with the snare, but the irritable and unhealthy condition that the meatus was in from the previous application of the caustic, precluded the employment of any other means except syringing with warm water. I found the bottom of the meatus completely filled up with a fungous mass, which appeared to grow from the middle ear, this I set about removing by the application of a point of nitrate of silver, which, during the first month was had recourse to almost daily, when both the morbid growth and the discharge began to lessen. During the following five months the caustic, either in substance or solution as the occasion warranted, was applied at longer or shorter intervals ; at the same time the ears were syringed night and morning with great assiduity. In the beginning of October last the discharge had ceased in both ears, and has never returned in the right, which has not been subject to treatment of any kind for the last two months. In the left, which he has left off syringing for some time, I find, on examining it about once a week, that a small clot of greenish mucus, like that expectorated from the lungs, fills up the bottom of the meatus, but it never amounts to discharge ; the part is still occasionally touched with a solution of nitrate of silver. This gentleman's hearing is now restored so much that it would be

scarcely possible, even in general conversation, to know that he had been ever affected ;—to use his own words in his letter of October last :—

“ I have now,” he says, “ been under your care for nearly six months—my hearing is so far restored that I find not the slightest inconvenience from any defect that may remain ; I can now hear the clock strike, with closed doors, in any part of the house in which any other person can hear it, although formerly I could not hear it in my bed-room when the door was shut, although the clock is immediately outside my room.”

With this gentleman the membrana tympani is almost entirely removed ; in the left ear, the Eustachian tube is closed, and the promontory, with a portion of the inner wall of the meatus, is quite apparent. Of the ossicula I can find no trace ; yet, strange to say, his hearing is almost as acute as if he had suffered no loss of his auditory apparatus. In the right ear the membrane is still perfect, but thickened and collapsed.

In concluding this lengthened essay, which has grown to an extent that was not contemplated at its commencement ; and for which, the frequency and importance of the disease which it describes is its only apology, I beg leave briefly to sum up some of the consequences to which protracted otorrhœa may lead, viz. :—

Permanent thickening of the walls of the external auditory conduit, particularly at its orifice, which it sometimes partially closes or converts into a slit. Its deleterious effects on the ceruminous glands. Its production of the diseased cuticular lining, as described in Mr. Ware’s case ;—a thickening and opacity of the membrana tympani ;—collapse of this membrane from the effects of inflammation upon the movements of the ossicula ;—a granular state of the membrana tympani ;—perforation of the membrane, or its complete destruction, thus doing away with the partition between the middle and the external ears ;—polypus, and fungous excrescences ;—loss of the ossicula ; and finally,

caries of the temporal bone, with all the train of symptoms and dangerous effects to which it leads.

In addition to those cases of caries which I have already detailed, two others have just been brought under my notice: one is that of division of the portio dura, as detailed by Mr. Hamilton at the fourth Meeting of the Pathological Society, 1840, in which he “found that the nerve in passing through the bone had been destroyed to the extent of about one-eighth of an inch. There was a difference between the two portions of the nerve, the upper portion was more vascular, and ended in a small bulb; the lower portion was pale, and apparently natural.” The symptoms of paralysis which were present in this case corresponded to those which I have described at page 400, and a similar lesion of the seventh pair of nerves must have taken place in the case from which the specimen figured at page 401 was removed. I am indebted to Sir Philip Crampton for an examination of one of the most extraordinary pathological *dissections* of diseased bone perhaps in existence, consisting of the entire internal ear, cochlea, vestibulum and semicircular canals, with a small portion of the inner wall of the tympanum, which Sir Philip drew forth from the meatus of a young lady who, after the most urgent symptoms of inflammation of the brain, with paralysis of the face, arm and leg, and total deafness of one ear, recovered from the head symptoms and the paralysis of the extremities after a copious discharge of matter from the ear. This discharge, the paralysis of the face, and deafness, continued some time, accompanied with occasional attacks of pain in the ear, till one day Sir Philip perceiving a portion of loose bone



lying deep in the cavity of the meatus, drew forth the accompanying specimen. In this, it does not appear that the hard external enamel of the bone was affected, but the scala cochlea is far more beautifully displayed than could possibly have been done by art. This lady recovered. Here it would appear that caries was the original disease; but in the great majority of instances, I feel

convinced, from what I have seen of the disease, that caries is the secondary affection consequent on neglected otorrhœa, a knowledge of which should impress upon us the necessity of carefully examining into, and, if possible, removing aural discharges in every stage of their course.

ART. XIII.—*Notes on Urinary Diseases*. By JOHN ALDRIDGE, M.D., Lecturer on Chemistry to the School of Medicine, Park-street, Dublin. Second Series.

[Continued from Number LXVII. of the DUBLIN MEDICAL JOURNAL, vol. xxxiii. p. 83.]

1. Liebig's Theory of the Urinary Secretion.
2. Neuralgia of the Ureters.
3. Oxalate of Lime Gravel.
4. Colouring Matter of the Urine.
5. The Relations of Albumen, Pus, and Epithelium.
6. Relations of Sugar and Albumen.
7. History of Lithic Acid Calculi.
8. On the Detection of Iron in the Urine.
9. Influence of the Mode of Death in producing Congestion of the Kidneys and Liver.

LIEBIG'S THEORY OF THE URINARY SECRETION.

SHORTLY after the publication of the first series of these notes, I read, for the first time, Liebig's late work on Animal Chemistry: and inasmuch as some of the views therein advanced appeared to militate against the conclusions to which the observation of disease had drawn me, I resolved to suspend my judgment until I had again carefully examined the premises of our respective arguments. The merited reputation of M. Liebig demanded this deference.

Amongst the propositions to which I have been led by my former researches, I consider none of greater value than the

following :—*that a deposition of lithates in the urine corresponds with an increased quantity of urea and lactic acid ; that the amount of these essential constituents of the secretion can be measured by the specific gravity, provided no unaccustomed substance, such as sugar or albumen, be present ; that the relatively increased quantity of lithic acid, urea, and lactic acid, in these cases, does not depend on a greater amount of these substances being secreted by the kidneys, but upon a deficiency of water, which renders the liquid more concentrated ; and that this deficiency of water proceeds from either of two causes, namely, a derivation to some other organ by flux or dropsy, or by a sympathetic irritation of the kidneys themselves.* The experienced physician will at once perceive the importance of the truth of this proposition ; by means of it he can discover in a case where the urine is high coloured and concentrated, and where there is no excessive sweating, diarrhœa, nor dropsy from the heart or liver disease present, the existence of an irritation in the head, chest, or abdomen, perhaps in other respects latent. Or, on the other hand, if the urine be pale and transparent, although strabismus, convulsions, delirium, heat of head and bounding carotids should all display themselves, he can confidently say, “ there is no inflammation here ; this is hysteria.”

But the greater the value of this proposition (if true) the more jealous ought we to be in its admission. Unlike the generality of chemical and physiological doctrines, this is one that involves a deep responsibility. It proffers a test between simple neuroses and inflammations ; between the necessity for a stimulating and antiphlogistic treatment ; and fearful in practice would be the results if this test were relied on and proved fallacious. I may be forgiven, therefore, for entering into a critical analysis of those theories of M. Liebig, by which he has been led to deductions opposed to the truth of this proposition.

As well as I can collect from the work referred to, the

following appears to be a candid exposition of M. Liebig's views.

He looks on the vital force as a property like electricity, naturally residing in a latent form in matter, and called into activity by certain circumstances. He says, "There is nothing to prevent us from considering the vital force as a peculiar property, which is possessed by certain material bodies, and becomes sensible when their elementary particles are combined in a certain arrangement or form." He considers life to "consist in certain phenomena of motion and activity, in consequence of transformations and changes undergone by matter previously constituting a part of the organism." "If the vital phenomena be considered as manifestations of a peculiar force, then the effects of this force must be regulated by certain laws, which laws may be investigated, and these laws must be in harmony with the universal laws of resistance and motion, which preserve in their course the worlds of our own and other systems, and which also determine changes of form and structure in material bodies; altogether independently of the matter in which vital activity appears to reside, or of the form in which vitality is manifested." He regards as "the only known ultimate cause of vital force, either in animals or in plants—a chemical process."

Vital force, according to him, decomposes food, alters the direction of chemical forces, causing the production of compounds, either similar to, or differing from the elements of the tissues; overcomes attraction of cohesion. "The vital force is also manifested as a force of attraction, inasmuch as the new compound produced by the change of form and structure in the food, when it has a composition identical with that of the living tissue, becomes a part of that tissue." When by the act of manifestation of this energy in a living part, the elements of the food are made to unite in the same form and structure as the living organ possesses, then these elements acquire the same powers. By this combination the vital force inherent in them is enabled to manifest itself freely, and may be applied in the

same way as that of the previously existing tissue." But the vital force is not only a cause of growth in the mass, but also "of resistance to those external agencies which tend to alter the form, structure, and composition of the substances of the tissue in which the vital energy resides." So far we may regard the vital force as being in static equilibrium, determining the passage of matter from a state of motion to that of rest, and retaining it in this state of rest.

But living beings are naturally divided into two great groups, vegetables and animals; and these groups differ in their relations to external agents, as well as in their manifestations of vitality. Vegetables convert the water and carbonic acid of inorganic nature into starch, sugar, gum, lignin (non-nitrogenised principles); and the same substances, together with ammonia, into gluten, vegetable albumen, and legumin (nitrogenized): moreover, in vegetables, the tissues once formed undergo no further change, so that there are no necessary limits to their growth; and in them we find no trace of a nervous system, nor of organs of locomotion. Animals, on the contrary, do not create their food. Feeding directly or indirectly upon vegetables, they find in their nitrogenised principles substances identical in composition with their own blood and tissues. In place of being produced the food becomes decomposed into its original elements, in their organism, and the water carbonic acid and ammonia, which serves for the food of vegetables, becomes eliminated from the lungs and kidneys of animals. Animals inspire oxygen, which permeates every part of their structure. They are capable of attaining an adult size, beyond which they never increase, and this is produced by a decomposition of their tissues, synchronous and equal to their growth. Lastly, they are organised for motions, both voluntary and involuntary, a constitution necessary in them for the performance of every function.

These essential peculiarities, Liebig links together in the relation of cause and effect. The decomposition of the tissues

he looks on as the consequence of the inspiration of the oxygen ; motion as the result of the tissues becoming decomposed.

We have seen that according to the hypothesis, vital force neutralizes chemical affinity, causes growth, and resists external agency. The excess of vital force over what is necessary to neutralize the chemical, constitutes the *momentum of force* in the living part, by means of which the change was produced. "By means of this excess the part acquires a permanent power of causing further decompositions, and of retaining its condition, form, and structure, in opposition to external agencies."

"We may imagine this excess to be removed and employed in some other form. This would not of itself endanger the existence of the living part, because the opposing forces would be left in equilibrio, but by the removal of the excess of force the part would lose its capacity of growth, its power to cause further decompositions, and its ability to resist external causes of change. If in this state of equilibrium, oxygen (a chemical agent) should be brought in contact with it, then there would be no resistance to the tendency of the oxygen to combine with some element of the living part, because its power of resistance has been taken away by some other application of its excess of vital force.

In vegetables the excess of vital force is employed in preventing the decomposition of the nitrogenised elements, as well as growth. In animals the motions, voluntary as well as involuntary, constitute an additional application of this excess.

A man inspires thirty-two ounces and a half of oxygen during the day, yet there is no increase of weight, because it is all returned in the form of water and carbonic acid. It is necessary that he should take as much food as will supply carbon and hydrogen to unite with this oxygen. "The oxygen, in the respiratory process, consumes without exception all such substances as are capable of entering into combination with it. It combines with whatever is presented to it, and the deficiency of

hydrogen is the only reason why carbonic acid is the chief product; for at the temperature of the body the affinity of hydrogen for oxygen far surpasses that of carbon for the same element.

The food of animals is partly nitrogenised, partly non-nitrogenised. We have seen that the former is identical in composition with the blood and tissues; it is dissolved in the stomach, absorbed, and serves for growth. The latter is incapable of forming blood, or of nourishing the organs. It is burned by the oxygen in the circulation, forming water and carbonic acid, and liberating heat. This very combustible matter in the blood serves to protect the tissues from the destructive influence of oxygen.

But the principal secretions contain nitrogen. These cannot therefore be wholly formed, although they may in part, from the non-nitrogenised elements of food. They must proceed from the decomposition either of the blood or of the tissues. We know that the use of the blood is to nourish the tissues. It is unreasonable to suppose that it should undergo decomposition previously to doing so; and we have no evidence of its undergoing any such change. We know, from the fact of their not increasing in size, notwithstanding their continued nutrition, that the tissues are constantly decomposing, and in this we find a *vera causa* to account for the source of these secretions.

“In the animal organism we are acquainted with only one cause of motion, and this is the same cause which determines the growth of living tissues, and gives them power of resistance to external agencies; it is the vital force.” “All experience proves that there is in the organism, only one source of mechanical power, and this source is the conversion of living parts into lifeless amorphous compounds.” “Proceeding from this truth, which is independent of all theory, animal life may be viewed as determined by the mutual action of opposed forces; of which one class must be considered as causes of increase (of supply of matter), and the other as causes of diminution (of

waste of matter.) The increase of mass is affected in living parts by the vital force ; the manifestation of this power is dependent on heat ; that is, on a certain temperature peculiar to each specific organism. The cause of waste of matter is the chemical action of oxygen ; and its manifestation is dependent on the abstraction of heat, as well as on the expenditure of the vital force for mechanical purposes."

In fine, as regards the relations existing between the respiration, the waste of tissues, and the moving force in animals, M. Liebig thinks that the vital force is in a direct ratio to the number of living particles ; that by the waste of the tissues vital force is liberated ; which is generally distributed by the nerves ; that some of it serves for increase of the mass ; some for mechanical motion, whether voluntary or involuntary ; that by rest the momentum of this vital force becomes increased ; that at all times, that available for voluntary mechanical purposes is the sum, minus what is requisite for growth and involuntary motion ; that sleep is the period for accumulating force ; and that in health an equilibrium must exist between the amount of sleep and the amount of voluntary motion.

I have taken some pains in drawing up the foregoing outline of M. Liebig's views. In the meagre manner in which they are here presented, it is probable that the reader will find little with which he is not already acquainted. That vital force is at once the effect and the cause of organization ; that through its agency the organic elements of the tissues are produced ; that nutrition is a result of its influence, causing each tissue to attract from the nourishing juice molecules similar to its own ; these are propositions very generally admitted. M. Liebig does not claim any originality in the observation of that waste of the tissues which has been long known as the distinctive character between animals and vegetables. Neither is there any novelty in connecting this waste with nervous function,*

* Vide *Traité Complet de Physiologie de l'Homme*, par Fred. Teidemann, Part II. p. 406

nor in regarding it as a process of oxydation, the result of respiration ; nor in considering the different secretions as the products of this waste.* I am bound to say that the theory which supposes mechanical force in animals to originate in vital force, liberated and set in motion by the waste of tissues, is new to me, ingenious, and very probable. But with the exception of this, a man of very moderate research may venture to say he has heard all these before. It is not, however, in the originality of general principles that the merit of M. Liebig's work resides ; it is in the skill with which these general principles are brought to the explanation of details ; the invention with which a host of probable conjectures are thrown round difficult phenomena ; the imagination which discovers in every operation of art or nature, analogies calculated to elucidate the hidden workings of vitality ; the judgment which separates what is essential from what is accidental, and fastens on the elements of a sequence in the strict order of causation ; the boldness which has thrown off the yoke of vague hypothesis and mysticism, and has opened the portals of physiology to that unshackled and synthetical reasoning which has so rapidly enlarged the empire of physics and of chemistry. All these, collected, combined, amplified and animated by the energy of genius, render the publication of M. Liebig's work an era in the philosophy of the age.

A theory, however, may be considered to be too perfect when it is brought to explain as facts things that have no existence in nature. It is easy to comprehend, that a generaliser, even of M. Liebig's talents, may unguardedly, in the ardour of applying his deductions, admit the truth of phenomena, although insufficiently attested, especially if they furnish arguments in favour of his views. The temptation to push a doctrine beyond its legitimate limits appears to be one to which even the greatest minds have always more or less yielded. It could not be expected that M. Liebig should have proved infallible in these

* *Op. cit.* p. 440, et seq.

respects ; and I think I shall be enabled to show, that as far as regards the modifications of urine in disease he has fallen into many and serious errors.

M. Liebig thinks that alterations from the normal condition of the urine are produced either by excessive or deficient oxydation. According to him the solid constituents of the urine are products of the transformation of the tissues ; and the quantity excreted, therefore, forms a direct measure of the rapidity of this change. On the contrary, the presence of non-nitrogenised and more combustible substances either diminishes the amount of decomposition which the tissues undergo, or renders imperfect the process of oxydation. Want of exercise, by diminishing respiration, produces the same effects. In corroboration of these views he makes the following statements :—

“ From the first moment that the functions of the lungs or of the skin are interrupted or disturbed, compounds rich in carbon appear in the urine, which acquires a brown colour.” Again, after shewing that by addition of oxygen, uric acid becomes converted into urea and carbonic acid, he proceeds in section 32nd, part 2nd, to state that the mulberry and urate of ammonia calculi occur always in sedentary persons from want of oxygen ; that these calculi never are found in phthisical patients ; and that persons having uric acid calculi in town get oxalic acid calculi when they go to the country and take more exercise. He quotes from Dr. Prout, that “ in fevers and during rapid emaciation, the urine contains more urea than in the state of health.” He asserts that the use of wine and fat promote the formation of uric acid ; and he again quotes from Dr. Prout, that “ the urine after fat food has been taken, is turbid, and deposits minute crystals of uric acid.” Again, in section 33rd, he says, that “ in animals which drink much water, by means of which the sparingly soluble uric acid is kept dissolved, so that the inspired oxygen can act upon it, no uric acid is found in the urine, but only urea. In birds, which seldom drink, uric acid predominates.” In the 42nd section we find, “ concretions

of uric acid have never yet been observed in carnivorous mammalia, living in the wild state."

Having been led by a chain of reasoning, unnecessary here to repeat, to the belief that the bile in herbivorous mammalia and man, is partly formed from non-nitrogenized food, carried directly by the vena porta to the liver, and partly from nitrogenized products of transformation; M. Liebig makes the following reflections on the effect of animal food in altering the secretions: section 70—"The appearance of uric acid in the urine, the deposition of uric acid in the joints and in the bladder, as well as the influence which an excess of animal food (which must be considered as equivalent to a deficiency of starch, &c.) exercises on the separation of uric acid in certain individuals may be explained on this principle. If starch, sugar, &c. be deficient, then a part of the azotised compounds formed during the change of matter, will either remain in the situation where they have been formed, in which case they will not be sent from the liver into the circulation, and therefore will not undergo the final changes dependent on the action of oxygen, or they will be separated by the kidneys in some form different from the normal one."

The above are the sole data which M. Liebig offers us, by which to test the truth of his theory—that the modifications of the urine are produced by variations in oxydation of the waste of tissues. I will proceed to examine each of them, and see how far they are calculated to support his doctrine.

It is not easy to understand what M. Liebig means by disturbance or interruption of the functions of the skin or of the lungs, but it is certain that profuse sweating will produce concentrated and scanty urine, whilst suppression of the perspiration by external cold, will cause the renal secretion to become pale and watery. I do not know of any accurate experiments as to the respective influences of moist and dry air upon the urine, but it is notorious that the use of the bath, during which oxydation by the skin must necessarily be much impeded, ren-

ders the urine pale in proportion as it increases its quantity. Inflammatory affections of the skin no doubt cause this liquid to be scanty and high coloured, but I have seen in ancient psoriasis, where much of the surface was covered with scales, the urine extremely limpid; and as regards the function of the lungs, observation has shown that "the compounds, rich in carbon," are relatively abundant in pneumonias, acute catarrhs, and pleurisies, just as they are in gastro-enterite and inflammations of the brain, but after a fit of spasmodic asthma we often find the urine perfectly natural in its appearance, as it is also in emphysema, if not complicated by an acute affection. I think, therefore, that M. Liebig is not warranted in his sweeping assertion, that "from the first moment that the functions of the lungs or of the skin are interrupted or disturbed, compounds, rich in carbon, appear in the urine."

Does experience justify M. Liebig in the statement, that the mulberry and urate of ammonia calculi occur always in sedentary persons? Were Linnæus, Franklin, or Jean Jacques Rousseau sedentary persons? witness the "reveries of the solitary walker." I examined a mulberry calculus some time since, taken from a boy of twelve years of age, one of the most unquiet imps on earth, by no means a sedentary individual; and as regards phthisical persons, although I have no experience of any such labouring under calculi, this I can say, that when suffering from hectic, and sweating much, their urine is invariably loaded with lithates.

As for Dr. Prout's statement "that in fevers, and during rapid emaciation, the urine contains more urea than in the state of health," it is so much opposed to my experience that I can only account for it by supposing that he was led into error by the same oversight that made him imagine a diminution of urea in diabetes mellitus, namely, the neglect of the quantities excreted during equal times.

In opposition to M. Liebig's assertion, M. Rayer says, that large libations of wine produce watery urine; the fact appears

to be, that during the feverish condition following a debauch, the urine is loaded, but that at other times the habit of drinking wine or any other liquid, increases the quantity of urine. And, with respect to fat diet, if it increases the quantity of uric acid, other non-nitrogenized substances ought to produce the same effect, whereas observation shows that vegetable food in general makes the urine watery. Rayer has never seen crystallized uric acid in the urine of a person perfectly healthy.

M. Liebig's argument, drawn from the urine of birds, is a peculiarly unhappy one. If uric acid result from a deficiency of oxygen, then, surely, none should be formed in birds, a class of animals possessed of a double respiration, whose systemic as well as pulmonic capillaries are bathed in atmospheric air; but, says M. Liebig, from want of drink, the uric acid is not dissolved; is it not from the inspired oxygen uniting with the elements of the tissues, that, according to the hypothesis, the decomposition of the latter is produced, and the secretions formed, and if so, what matter whether these products be soluble or not; or are we to imagine that the secretions are carried to the emunctories in an insoluble form!

The last extract which I have quoted from M. Liebig's work, is an attempt to explain the pathology of gout; according to it an excess of animal food, more than what is required for nutrition, or the formation of bile, is apt, if oxygen be deficient, to generate uric acid in the system, which may become deposited in the joints, or load the urine; the explanation, however, leaves the azotised products in the liver, where there is no proof of their remaining, and does not inform us how the uric acid gets to the joints; why it cannot be found in the blood; why it should disappear from the urine during the paroxysm; and above all, why an abstemious man, taking much exercise, may become a martyr to this disease.

It is not my intention to dispute M. Liebig's theories of chemical action in living beings; I will leave where I find them the hypotheses of metamorphose by oxydation, and the source

of mechanical force ; even the doctrines concerning the production of the urinary elements are beyond the limits which I marked out for myself in this note ; I have only to do with the data upon which these doctrines appear to be founded, and I confess that I cannot find one justified by the recollection of facts.

If it be true that the quantity of solid matter excreted by the kidneys is liable to vary, from the numerous and trivial causes enumerated by authors ; if this alteration may exist without the presence of disease ; then are diagnostic characters drawn from this secretion of no value. If exercise to-day increases the urea and diminishes the uric acid ; if fat diet to-morrow increases the uric acid and causes it to deposit in small crystals, what reliance can be placed on the proportions of these constituents. The question is a most important one, and if, as I believe, the influence attributed to these circumstances be mistaken, the error becomes more serious when sheltered under the illustrious reputation of a Liebig.

M. Lecanu has made a very careful examination of the quantities of urea, uric acid, and salts, excreted during equal times by different individuals, and the following are the conclusions to which he has arrived.*

“ That the urea is secreted in equal quantities, during equal times, by the same individual.

“ That uric acid is equally secreted in equal quantities during equal times, by the same individual.

“ That the urea and uric acid are secreted in variable quantities, during equal times, by different individuals.

“ That the variable quantities of urea that different individuals secrete during equal times are in relation with the sex and age of those individuals, larger in men in the prime of life than in women equally in the prime of life, larger in those than in the aged and children.

* *Journal de Pharmacie*, tome xxv. p. 755.

“ That the whole of the materials of the urine, fixed and undecompoundable by heat, to wit,

The earthy phosphates,

Chloride of sodium,

The alkaline sulphates and phosphates,

are secreted in variable quantities, without any relation with sex or age, by different individuals, and in quantities not less variable, by the same individual, during equal times.”

The foregoing conclusions, drawn from a series of careful experiments, are totally subversive of the data brought forward by M. Liebig, at the same time that they are quite in accordance with the proposition with which I commenced this note, and to which I had been led by my previous researches. It may therefore be admitted as established, in the present state of science, *that in disease the urine is more frequently characterized by alterations in the quantity of water excreted, than by changes in the proportions of its essential organic elements; and that a deposit of lithates, in a case where there is excessive secretion from no other organ, is the sign of an irritation, either primary or secondary, of the renal substance.*

NEURALGIA OF THE URETER.

A gentleman, æt. 31, of a dark complexion and bilious temperament, somewhat emaciated, and with a countenance expressive of habitual suffering, came to me in the year 1839, complaining of the following symptoms: about four months before he was attacked suddenly, for the first time, with acute pain, shooting from the direction of the kidney towards the corresponding testicle; the pain frequently extended down the inner part of the left thigh, and was so excruciating as on one or two occasions almost to produce swooning, and generally brought on tendency to vomiting, sometimes violent retching. The principal seat of the pain was in the region of the kidney and along the course of the ureter. These attacks, at first occur-

ring only once or twice a week, had latterly increased very much in frequency; the period they occupied varied from a few minutes to several hours.

This gentleman had always very active habits, and was much addicted to field sports. Many members of his family had suffered from gout. He never recollected having any lateritious deposit from his urine, nor had he ever passed small calculi. He had formerly drank hard, and had been much addicted to venery. He twice had clap, the last time, six or seven years before, was a very bad one; he never had stricture. He had lumbago from exposure to cold two years ago, which was cured by friction with turpentine.

He had no tenderness on pressure in the renal region, no pain in making water, which was emitted in a full stream, no tenderness, enlargement, nor deformity of the prostate. His appetite good, bowels regular, pulse natural.

His urine was of an amber yellow colour, depositing, upon cooling, a light cloud of epithelium, specific gravity 1019, acid in its reaction, not albuminous.

What should be the diagnosis in this case? It was not nephritis; the pains commonly attributed by authors to this disease really belong, as M. Rayer has shewn, to inflammation of the calyces, infundibula, and ureters. The extreme severity of the pain, together with the absence of albumen or pus in the urine, forbids its being attributed to the latter inflammation. From nephritic cholic it differed in its long continuance, the absence of blood in the urine, the absence of calculi, and the pulse remaining undepressed, unremitting, and regular, during the attacks. The absence of pain during abduction and extension of the leg, forbade the idea of its being psoas rheumatism. The only conclusion to which I could arrive, after the most careful consideration of the symptoms, was, that it was a neuralgia of the ureter, probably involving the continuation of this duct in the substance of the kidney.

This gentleman had been cupped repeatedly, and treated alternately by acids and alkalies before I saw him ; I ordered him, in accordance with my diagnosis, large doses of carbonate of iron. I am unwilling to ascribe the rapid improvement which immediately followed to the influence of this medicine, having so frequently seen it fail in removing other neuralgic affections, but certain it is, the paroxysms very shortly ceased, and during a period of four or five months that I afterwards occasionally met him, he assured me that he was completely cured, and his improved appearance corresponded with this statement.

Since that time I have met, in dispensary practice, with three or four cases similar to the foregoing, but less violent in their symptoms ; and I am led to think that *neuralgia of the ureter* is less rare a disease than what is generally supposed.

OXALATE OF LIME GRAVEL.

A man came to me on the 6th of November in this year (1843), who presented symptoms that led his wife to suppose that he had contracted "the bad disorder."

He was by occupation a porter, aged about 45, and had always enjoyed good health ; he had formerly been in the habit of drinking, but had become a teetotaller about a year and a half since. He says he was not aware of any thing ailing him until his wife discovered stains on his linen, which led her to suspect his constancy. This occurred ten days before he came to me. After this discovery he found he had a discharge from the urethra, and suffered much pain in passing water. After a day or two he began to suffer much from tenesmus and frequent desire to go to stool, at the same time that his bowels were obstinately constipated. He took some doses of purgative medicine which failed to relieve him, and on the day above-mentioned, he came to me, principally, I imagine, to rescue his reputation from the injurious suspicions of his spouse.

When I heard his statement and examined the orifice of his urethra, which I found with swollen inflamed lips, I disbelieved, I confess, his asseverations of innocence, and thought he had acquired an ordinary gonorrhœa. As it appeared he had, in addition, some dysenteric symptoms, I ordered him some calomel and Dover's powder, and desired him to bring me some of his urine.

Next day he brought me some of his water, which, I take shame to say, I did not examine at the time, but desired him to continue the powders I had previously prescribed, and, when his mouth was a little sore, to take a dose of castor oil. I state these particulars candidly, for I am sure that the true nature of many an important case remains undiscovered from similar negligence.

He came to me again a few days afterwards, and told me that his mouth was slightly touched, and his bowels had been freed, the tenesmus was diminished, and the discharge from his urethra had completely disappeared. He brought me some of his urine, which I now examined, and found to be turbid with a copious sandy cloud, perfectly white in its colour. Upon placing some of the urine in the field of the microscope, I observed a great number of minute, and a few large, square plates, each with what appeared to be a round hole in the centre, but this, upon examination, was evidently an illusion. This led me to examine the former urine he had brought me, which contained a similar deposit.

I recollected to have seen a similar form of crystal represented in the first volume of M. Rayer's work, and stated to have been crystals of oxalate of lime, produced by the addition of oxalic acid to the urine. I therefore collected the sediment on a filter, boiled it with a little carbonate of ammonia, filtered again, and added to the strained liquid, solution of chloride of calcium; a precipitate was thrown down, to determine the nature of which I added dilute nitric acid to one portion, which be-

came dissolved, and boiled the remainder with a concentrated solution of muriate of ammonia, which remained insoluble. It was evident the sediment was oxalate of lime.

In consequence of this discovery, I inquired more particularly into the history of this case:—He had, it appeared, been always much exposed to cold and wet, however, not more so latterly than usual; he never had clap; nor ever had pain or uneasiness in passing water until the present attack: since the commencement of his illness he had no chest nor head symptoms; his appetite good; no thirst; no feverish symptoms that I could ascertain. He never had received any hurt in the back or loins. At present (30th November), he only complains of frequent desire to make water, urged by the pain which any accumulation causes in the bladder; and of constipation, with a constant sensation of wanting to go to stool, although the latter symptom is not so severe as it was. The sphincter ani is spasmodically contracted; the prostate feels very much enlarged and tender. There is neither pain nor deep-seated tenderness in either renal region, nor along the course of the ureter. The testicles are healthy.

His urine is acid, turbid, pale; examined with a high power it presents flakes of epithelium, an amorphous powder in small quantity, a number of square crystals, and a few mucous or pus globules; the crystals vary in size, some of them exceedingly minute, either in square tables, or in flattened octahedrons with a square base. Nitric acid detects a trace of albumen in the filtered liquid.

In this case, we may perceive, that there is neither nephritis nor inflammation of the ureters; the history shows that there was some urethritis in the commencement; at present we have only the evidences of a sub-acute inflammation and hypertrophy of the prostate, and inflammation of the neck of the bladder. To these lesions the treatment must, of course, be directed.

From whence comes the oxalate of lime? there is not the

slightest evidence that it proceeds from the kidneys. M. Douné says that he can produce oxalate of lime gravel in his own urine at pleasure, by eating sorrel. I have questioned this patient most particularly as to his food and drink, but cannot find any thing to account for the source of the oxalic acid. Can it be that the bladder or prostate may, in certain states of disease, secrete this substance? I have, in my former researches, shewn that in old cystitis the bladder secretes phosphate of lime; the cloaca of birds secretes both phosphate and carbonate of lime. Chemically, there is but a step between carbonate and oxalate of lime. The question, however, is one of mere curiosity.

COLOURING MATTER OF THE URINE.

After all the attempts that have been made to isolate the colouring matters of the urine, and determine their properties, we still continue ignorant of their nature. That there are several, appears probable; that it is extremely difficult to separate them from combination, is certain; but every thing else about them is involved in obscurity. Berzelius, the most careful investigator on the subject, denies the existence of rosacic acid; declares that purpurates never exist in the urine; and refuses to give a name to the colouring matter which he himself examined, being uncertain whether it might not be a mixture of different substances.

One common property, however, these colouring matters possess, which contrasts remarkably with the properties of those derived from vegetables. The red and yellow colours of plants are rendered deeper by alkalies, paler by acids; the colouring matters of urine, on the contrary, are rendered deeper by acids, and paler by alkalies. And this peculiarity does not seem to be confined to the colouring matters of the urine amongst animal substances, for, in examining an alvine concretion a short time since, I extracted from it a colouring matter possessing similar reactions.

Mr. O'Ferral sent to me some years ago a specimen of urine which he had observed to turn deep red with alkalies, and pale with acids. The characteristic behaviour of vegetable reds occurring to my mind, I suggested the probability of some red food or medicine having been taken by the patient : subsequent inquiry caused it to be ascertained that the patient was in the habit of eating "beet root pickles."

THE RELATIONS OF ALBUMEN, PUS, AND EPITHELIUM.

In acute inflammation of the lining membrane of the urinary passages the urine becomes albuminous. This albuminous urine can be distinguished from that of Bright's disease, by its high specific gravity, and the large amount of urea and uric acid present, as well as by the moist state of the skin and other general symptoms. The locality of the pain and tenderness will, in general, serve to point out what part of the urinary passages are engaged ; whether the ureter, the bladder, or the urethra.

During the acute stages of gonorrhœa, this condition of the urine is very apt to occur. My attention was first drawn to this fact by Dr. Graves, and I mentioned it in the digest of the state of science, affecting urinary diseases, published in the *Dublin Journal*, in 1839. Since that period I have frequently ascertained the urine to be albuminous during gonorrhœa, and have availed myself of it as a guide to treatment : in a recent case, where the urine has not yet become albuminous, I employ cubebæ in large doses, and weak nitrate of silver injections ; but when albumen appears in the secretion, as long as it continues, I recommend a spare regimen, diluents and sedatives.

Pus, when secreted from the urinary passages, is, on the contrary, an indication for tonic and stimulating treatment. I have seen, in cases of mulberry calculus, the urine loaded with pus, and this substance to disappear during the irritating process of dilating the urethra, preparatory to breaking the stone.

Mucous globules appear to indicate a condition intermediate

between the acute inflammation, in which albumen is secreted, and that asthenic state which exists when pus is poured out. I have seldom seen mucous globules in the urine except in sub-acute inflammation of the urethra ; in an analogous condition of the bladder or ureter, there is generally a mixture of albumen and pus,* but no true mucous globules.

I have frequently met with cases like the following : supposing an inflammation to exist in the neck of the uterus, the prostate, or some other neighbouring organ, a certain amount of pain and scalding in passing water is a very common symptom ; if the urine be examined, day by day, at first an increased quantity of *epithelium* will be observed in it, by-and-by it will be found to contain mucous globules. I may remark, that I have examined the urine, several times, of persons suffering from dysuria produced by turpentine, and have found a copious cloud of epithelium, but never any mucous globules.

In cystitis, and inflammation of the ureter, as long as there is much albumen or pus in the urine, the epithelium is usually very deficient in quantity ; but reappears according as the secretion returns to its natural condition.

I have been long of the opinion, from a comparison of these observations, that epithelium, albumen, mucus, and pus, are in the urine just modifications of the same thing : in health, you have the solid scales of epithelium ; in irritation, these become increased in quantity ; in acute inflammation, they become replaced by soluble albumen, and in sub-acute, by mucous globules ; in asthenic inflammation, these become replaced by pus.

If we examine, daily, the raw surface of a burn in the second degree, we shall see, at first, a transparent liquid oozing every where, rapidly caking into crusts ; after a few dressings we find the whole surface bathed with a purulent exudation ; and,

* Albumen always accompanies pus ; I speak above of a quantity of albumen greater than what usually is found with the given amount of pus.

if the case go on favourably, there afterwards appear little islands of cuticle, commencing in isolated points, by degrees enlarging, and spreading in every direction so as to unite with those adjoining: if we imagine a similar condition of the lining membrane of the bladder, we would find in the successive presence of albumen, pus, and epithelium in the urine signs of the stages which were internally in progress. The glairy, transparent, frothy sputa of acute catarrh, the opaque or puititory sputa of chronic catarrh, and the rusty, tenacious expectoration of pneumonia are not more characteristic than the signs furnished by the urine.

There is nothing to prevent us from believing that the same albuminous secretion may, according to the circumstances in which it occurs, solidify into scales of epithelium, or become moulded into globules of pus or mucus.

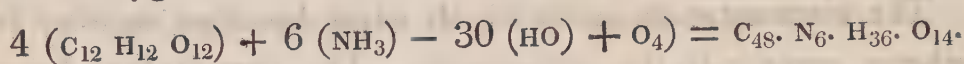
I may now take occasion to confirm the statement of M. Rayer, that pus never appears in the urine, except in suppuration of the urinary passages, or when an abscess bursts into them. The opinion that pus may be discharged along with the urine, by metastasis from distant abscesses, is not only contrary to anatomical possibility, but also to all accurate observation; and I have no doubt that the supposed purulent deposits from the urine, in cases of hepatic abscess, were simply sedimentary lithates, which have often been thus mistaken. It is most important that this error should be corrected, otherwise we lose the certainty of pus in the urine being a positive sign of local disease.

RELATIONS OF SUGAR AND ALBUMEN.

Late researches have ascertained that albumen, fibrine, and caseine, are all identical in composition, with the exception of certain quantities of sulphur and phosphorus that they contain. The name of *proteine* has been given to the constant proportions of carbon, hydrogen, nitrogen, and oxygen, which are common to them all. This *proteine* is composed of C_{48} . N_6 . H_{36} . O_{14} .

Moreover, the gluten, albumen, and legumin of vegetables contain proteine, the same [as the essential constituents of the blood and milk in animals.

Vogel and others have shown that the vegetable principles just enumerated are capable of being dissolved in the stomachs of animals, and absorbed as ready-formed blood, capable of nourishing the tissues. There is reason to believe that these vegetable substances are formed out of sugar and ammonia, by the loss of oxygen and water : thus,



Now, if the essential constituent of albumen is capable of being formed out of sugar and ammonia, with loss of water and oxygen, there is no reason why sugar and ammonia should not be capable of being generated out of albumen, by combination with oxygen and the elements of water.

In diabetes mellitus sugar is present in the urine : its presence in the blood in this disease has been stated by Ambrosiani, Maitland, and M'Gregor : chemists of the first eminence have, however, failed in detecting it ; Liebig, in his late work, takes it for granted that its presence in the blood never has been proved. After all, if found in the blood, its origin would remain equally obscure. The true question is, what is the source from whence the sugar is derived ?

Not from vegetable food ; I have seen persons labouring under this disease fed for weeks upon an aliment purely animal, yet they have discharged ounces of sugar daily. I do not mean to deny, that animal food is calculated to diminish the quantity of sugar in the urine ; I look upon it, in a remedial light, as a useful means of combating the disease. But let any physician recollect the amount of farinaceous food, which a diabetic patient in hospital ordinarily consumes ; and compare it with the quantity of sugar he passes in his water, and the simplest arithmetical calculation will show that the one cannot possibly be the source of the other.

Liebig has demonstrated that plants are constantly preparing the food of animals, and that animals are as perpetually disengaging the food of plants : in the one there is a continual process of forming organic substances, in the other of decomposing them. The water, carbonic acid and ammonia eliminated from animals, serve as aliments for vegetables. I can see no objection to the hypothesis being examined, that the sugar and ammonia which by their combination produce albumen, may be formed, in certain cases, by its decomposition.

The circumstances under which sugar becomes secreted in diabetes, agree with this hypothesis:—The perspiration being suppressed, the quantity of water necessary for the formation of sugar and ammonia out of albumen, may be conceived to be thus afforded.

But there are two observations that seem to add strength to this opinion. The first is, that in all cases where I have had an opportunity of examining diabetic urine immediately upon being passed, I have invariably found it neutral ; this may be explained either by the acid of the urine being saturated by ammonia or some other base, or by its being secreted in diminished quantity. The former supposition would accord with the hypothesis of the sugar being derived from the decomposition of albumen. This urine, although at first neutral, rapidly becomes acid, from the sugar undergoing the lactic fermentation, and the acid thus generated throws down the lithic acid in large crystals. After some time, confervoid filaments, beautiful microscopic objects, become diffused through the liquid ; and still later, if mould collect upon its surface, globules of various sizes form, which M. Quevenné considers to be yeast, but which I think are the sporangia of the fungi. This I believe to be the history of the putrefaction of diabetic urine.

The other observation is, that diabetic blood contains less albumen than normal, in proportion to its other constituents. The blood of a diabetic patient that I examined some time ago, contained in 2285 grains,

Fibrine,	7·9
Hæmatosyne,	411·5
Albumen and insoluble salts,	164·5
Water and soluble salts,	1701·1

The quantity of water is here much less than usual; this is easily accounted for by the enormous discharge from the kidneys: but the albumen, in proportion to the other solid elements, is much diminished.

There are several points of view in which diabetes mellitus resembles Bright's disease; in both there is a suppression of the functions of the skin; in both there is a tendency to secondary complication; in each there is a new element added to the urine; in both the serum is apt to become milky from admixture with a butyracious fat; in both there is a tendency to increased watery secretion, in the one case a flux, in the other dropsy; in both there is a diminution of albumen in the blood.

Dr. O'Beirne has lately suggested, in a very ingenious essay on dropsy, published in this journal, that albumen in the urine, in Bright's disease, proceeds from pressure and consequent obstruction of the vesical veins. If so, why is not the urine albuminous in ascites depending on lesions of the heart or liver? and why is the urine albuminous in cases of mottled kidney without dropsy?

In diabetes there is often albumen in the urine, sometimes a sign of favourable import, sometimes the precursor of dropsical effusions.

Before I conclude this note, I wish to notice a practical fact with respect to the detection of albumen:—Nitrate of albumen is soluble in excess of urine; if nitric acid be added in small quantities to albuminous urine, the precipitate at first formed is capable of being re-dissolved by agitation. This proves that nitric acid is a bad means of detecting small quantities of albumen in the urine.

HISTORY OF LITHIC ACID CALCULI.

The general opinion in the Profession with respect to the formation and history of lithic acid calculi, appears to be the following:—Certain kinds of food, atmospheric influences, and particular constitutional predispositions, are supposed to generate what is called the “lithic acid diathesis,”—a state characterized by a tendency to an increased secretion of lithic acid from the kidneys. This acid and its salts being very sparingly soluble, are apt to concrete in the first urinary passages, forming gravel, or, it may be, small calculi, which by-and-by, carried down by the force of the urinary torrent, and tearing their way along the ureters, produce fits of nephritic cholic. Some of these small calculi may be retained in the bladder, where they will grow at the expense of the saturated liquid that flows by them; but producing much annoyance in the bladder, and impeding healthful exercise; a cachectic state is brought on, and a new diathesis established. This latter diathesis is the phosphatic, in which there is a tendency to an increased secretion of phosphates; these salts being also sparingly soluble, obey the usual laws of crystallization, and deposit on the nucleus already formed by the lithates. This diathesis may for a time be removed by treatment, but only to make room for a return of the lithic acid diathesis.

The treatment which this hypothesis suggests is exceedingly simple. Alkalies dissolve the lithates, and acids dissolve the phosphates. So, of course, when the lithic acid diathesis prevails, you give alkalies; and when the phosphatic diathesis predominates, you exhibit acids.

I believe the whole theory to be founded on misapprehension. I have already given my reasons for disbelieving in the existence of lithic acid and phosphatic diatheses; I will not recapitulate them here, but simply present, in the form of propositions, what I believe to be the truth.

1st. Whenever the perspiratory secretion from the skin, the gastro-pulmonary mucous membrane, or the cellular tissue, is increased, the quantity of water in the urine becomes diminished.

2nd. Whenever there is an irritation of the kidneys, whether primary or secondary to an inflammation, acute or subacute, of any other organ, the quantity of water in the urine becomes diminished.

3rd. Whenever the quantity of water in the urine becomes diminished, below the minimum necessary for holding in solution the sparingly soluble lithic acid, or super-lithates, at a given temperature, those substances will become deposited at that temperature, provided the urine be sufficiently acid.

4th. Whenever lithic acid, or the super-lithates, become deposited and retained in any part of the urinary passages, they act as foreign bodies, and excite an inflammatory action in the contiguous mucous surfaces, which inflammatory action is apt to spread downwards to the extremity of the urethra, and upwards to the tubular and cortical substances of the kidneys.

5th. Whenever the tubular and cortical substances of the kidneys become inflamed, in a subacute manner, a generally cachectic state of the system is produced, and the urine ceases to be acid.

6th. Any irritating cause, such as the incautious introduction of sounds, &c., is apt to convert the subacute into acute inflammation of the kidneys, marked by frequent rigors, suppressed or scanty and bloody urine, &c.

7th. Whenever the urine ceases to be acid, it can no longer hold the earthy phosphates in solution, which then become deposited on any substance in the urinary passages calculated to act as a nucleus.

8th. In order to prevent the deposition of lithic acid, or the super-lithates in the urinary passages, the causes which produce

diminution of the quantity of water in the urine, according to propositions first and second, must be removed.

9th. In order to prevent the deposition of the phosphates, the acidity of the urine must be restored by subduing the existing nephritis, whether acute or subacute.

10th. In certain cases of chronic cystitis, phosphate of lime becomes secreted from the mucous membrane of the bladder.

11th. The chief deposit from the urine, when alkaline, is composed of crystalline phosphates.

12th. The fusible calculus, which is a mixture of crystalline phosphate and phosphate of lime, is produced in complications of chronic cystitis and subacute nephritis.

ON THE DETECTION OF IRON IN THE URINE.

As iron is generally admitted to form an essential constituent of the blood, and as the kidneys are the emunctories from whence the fixed constituents of the tissues are eliminated, we might expect to find iron in the urine. Yet, Berzelius in his often quoted analysis made in 1809, does not mention this metal among the constituents of the urine, although he determined the decimal 0.03 of silica in the thousand parts, as being present. It is impossible to believe that if iron had been contained in the urine it could have escaped detection by this accomplished chemist.

Vogel found oxide of iron in the urine of the rhinoceros; but as this substance is not found in the renal secretion of carnivorous mammalia, nor in any other herbivorous mammalia, nor in the urine of birds or reptiles, it is doubtful whether its presence in the urine of the rhinoceros may not have resulted from accident.

Wöhler says that iron, when given medicinally in the state of oxide, does not escape by the urine. There is no doubt that iron, when acting the part of an acid, as in yellow prussiate of potash, does escape by the urine. There are two preparations

of iron used in pharmacy, in which the iron acts the part of an acid, namely, tartarized iron, and the tincture of acetate of iron ;* in both those instances a salt of iron acts as an acid to a salt of potash. Neither of them, however, enter the urine, being decomposed by the process of respiration, which converts vegetable acids into carbonic acid.

My attention was drawn to this subject by Mr. Bewley of Sackville-street, at whose request I commenced, during the last winter, a series of experiments on the influence of iron on the secretions. Every one is aware of the agreeable and useful preparation of iron invented by Mr. Bewley, which he has named “Aqua Chalybeata ;” as pleasant to the taste as champagne,—it possesses, in a high degree, the peculiar virtues of ferruginous preparations, whilst it is more constant in its effects, and less likely to disorder the stomach and bowels, than any other chalybeate. Mr. Bewley was anxious to ascertain whether this preparation passed off by the kidneys, a thing to be expected from the statements contained in the principal works on *Materia Medica*.†

I had been already aware that some of the highest chemical authorities, as we have seen above, had failed in detecting iron in the urine, either naturally, or after this metal had been taken medicinally. Still, the reason of this might have been, that the iron existed in such a state of organic combination, as to prevent its usual behaviour with reagents. It is known that neither ferrocyanide of potassium, sulphocyanide of potassium, nor tincture of galls, will detect the iron in hæmatosyne, tartarized iron, or tincture of the acetate of iron ; neither will red prussiate of potash detect the iron in yellow prussiate of potash.

I resolved to examine the three following kinds of urine,—

* See my views on this preparation, in the *Dublin Journal*, 1836.

† Thus the usually accurate Barbier says, “on sait que les urines de ceux qui font usage de ces médicaments prennent souvent une couleur noire, lorsqu'on y mêle l'infusion de noix de galle.” *Traité de Matière Médicale*, T. i. p. 510.

healthy urine, the urine of chlorotic patients, and the urine of persons who had taken large doses of different ferruginous preparations. Secondly, to employ a process calculated to destroy all organic matters, so as to break up the existing state of combination, if any, that the iron might be in, and thus to enable it to react with the usual tests.

The process which I pursued was the following: I evaporated the urine to an extract, then added nitric acid, sp. gr. 1460, and boiled to dryness in a Florence flask; then ignited the residue, and digested with dilute sulphuric acid; filtered and saturated with ammonia; and lastly employed as tests, red and yellow prussiates of potash, sulphocyanide of potassium, and tincture of galls. The saturation must be accurate, for an excess of acid will determine a blue precipitate in a pure solution of yellow prussiate; and an excess of alkali will prevent the reaction of the sulphocyanide.

The preparations of iron that I gave the patients were, the "Aqua Chalybeata," the tincture of the sesquichloride, and the saccharated carbonate; the doses, a bottle a day of the first; fifteen drops, three times a day, of the second; and ten grains, three times a day, of the third.

In no one instance could I detect the slightest trace of iron; neither in the natural urine, the urine of chlorotics, nor of those taking martial preparations.

It has been asserted that iron is present in the urine of chlorotic patients, previous to treatment, but that it disappears according as the blood-globules increase in number. In order to show that there was no doubt about the disease, in my experiments, I give the following tabular view of the cases, and their symptoms:

NAME.	AGE.	HABITS.	SYMPTOMS.	REMARKS.
Mary Moran,	20	Servant.	Pale lip and tongue; bruit de diable; headach; palpitation; constipation; thirst; anorexia; swelled legs; amenorrhea.	Slight cough and dyspnœa.
Ellen Ryan,	21	Hat trimmer.	Bruit de diable; anæmic appearance; scanty menstruation; heart's action natural; constipation; stools dark-coloured.	General anasarca and ascites; sweating on slightest exertion; urine not albuminous.
Anne O'Neil,	20	Plain worker.	Anæmic; bruit de diable; no catamenia this month; palpitation; swelled legs; thirst.	Bowels regular; appetite good.
Eleanor White,	21	Fringe and tassel maker.	Anæmic; bruit de diable; palpitation; swelled feet; constipation.	Catamenia regular as to time and quantity.
Jane Peile,	40	Vegetable dealer; teetotaller; had six children: carries heavy loads.	Anæmic; bruit de diable; no catamenia these two months; red, loaded tongue; thirst; constipation; anorexia.	Pain in loins and head; both worse when standing; had to be treated at the first for chronic gastritis.
Eliza Peile,	21	Dealer; teetotaller.	Symptoms similar to Mary Moran.	Menorrhagia.
Catherine Farrell,	26	Farmer's daughter.	Bruit de diable; bloodless appearance; vertigo; palpitation; swelled feet; constipation; thirst; anorexia.	
Ellen Cavanagh,	16	Children's maid; not a teetotaller.	Bruit de diable; anæmia; swelled feet; headach; palpitations; amenorrhea; tenderness at epigastrium; constipation; anorexia.	Nausea; had to be treated at first for subacute gastritis.
Maria Gerty,	23	Varnisher.	Bruit de diable; anæmia.	Menorrhagia; leucorrhœa.
Mary Anne Lake,	17	Furniture varnisher.	Anæmia; bruit de diable; never had catamenia; headach; palpitations; swelled feet; constipation.	Bruit in first sound of heart under nipple, and in both sounds behind sternum; bounding carotids.
Margaret Doyle,	19	Dressmaker.	Bruit de diable; amenorrhea.	Not anæmic looking; no headach, palpitation, nor swelled legs; severe pain in stomach with symptoms of gastritis.

In none of these cases, either before or after treatment, could iron be detected in the urine.

The case of Ellen Ryan is remarkable as an instance of general anasarca, and even ascites, resulting from chlorosis.

In the case of Mary Anne Lake it was ascertained, after the removal of the chlorotic symptoms, that she had the signs of both aortic and mitral valve disease, probably originating in a rheumatic fever which she had five years before.

All the above cases were attending the dispensary at Saint Vincent's Hospital, during the spring of 1843.

What becomes of the iron that is given medicinally? That it is absorbed is proved by the experiments of Tiedemann and Gmelin; but that it is absorbed in very variable quantities, and very slowly, is also proved by the same experiments. There is also no doubt that the blood globules are increased by its use. Now what is the nature and source of these blood globules? The colouring matter, which is their chief constituent, does not enter into the formation of any of the tissues. It has a composition totally at variance with that of the nutritive constituents of the blood. Vegetable-feeders are capable of producing it, although it is not contained in their food. It commences in the animal series with the red tissues, and is for the most part confined to their circulation. Is it too violent an hypothesis to suppose that it is a secretion, having a use in the organism, and that means are provided to prevent its decomposition; and that all the iron that is absorbed is retained for its production?

INFLUENCE OF THE MODE OF DEATH IN PRODUCING CONGESTION OF THE KIDNEYS AND LIVER.

Bichat has well described the different modes of death, by apoplexy, asphyxia, and syncope. Later researches have shown that he was mistaken as to the mechanism of death by asphyxia, in attributing it to the poisonous influence of black blood on the brain; when in point of fact the black blood never reaches the brain, the pulmonary veins being incapable of conveying it to the left cavities of the heart. In most other respects his views continue to be generally adopted.

The means of distinguishing the modes of death have been admirably described by Devergie, and I cannot afford a better introduction to this note, both for the purpose of explaining the present state of knowledge on this subject, and for elucidating what I claim as original, than to quote the *resumé* with which he concludes his chapter on the modes of death.

"If the cause of death acts by suspending the whole action of the heart (syncope) we find the lungs, the brain, and the general capillary system, as nearly as possible in a normal state: the arteries contain blood; and both the right and left sides of the heart contain nearly an equal quantity of this fluid.

"In death which commences by the lungs, the left side of the heart, the arteries, and the substance of the brain, are nearly devoid of blood. The general capillary system, the veins, the right side of the heart, and the lungs, are filled with this fluid.

"Finally, if death arises in the brain: the arteries and the left side of the heart do not contain blood; the right side of the heart, the veins, and the lungs, contain, on the contrary, a notable quantity of this fluid, but much less considerable than in those cases where the death originates primitively in the lungs."*

I here omit the characters of death by wounds of the heart.

We find by the foregoing, that in death by syncope, the brain appears to be engorged, when compared with the same organ in death by asphyxia: and thus is explained the apparent anomaly that the brain should be found more vascular in an animal when bled to death, than when strangled. I have alluded in the former series of these notes, to a case where the concurrence of head symptoms during life, with a certain amount of cerebral congestion, after death, might have led to a serious pathological error.

The lungs are engorged as well in death by apoplexy, as by asphyxia: this shows us that we cannot judge of the amount of pulmonary congestion during life by that we find after death.

The object of this note is to demonstrate that the principles of sanguineous distribution above described, and known since the time of Bichat, apply equally to other organs, besides the heart, lungs, and brain, and especially to the liver and kidneys.

* *Médecine Légale*, tom. i. p. 57.

Mr. O'Ferrall, to whom I owe so much for the extensive opportunities which he has afforded me at St. Vincent's Hospital, first led me to this discovery, in the following manner :— He had a patient in private practice who died suddenly of fatty heart ; and a few days after the decease, we were engaged in examining the viscera : putrefaction had proceeded to a certain extent, and by the extricated gases driving the blood from the large vessels into the viscera, the latter were generally gorged. But what particularly attracted Mr. O'Ferrall's attention was the pale condition of the liver, and the exceedingly congested state of the kidneys. He pointed out these organs to me, and asked me could I furnish an explanation ? The idea immediately struck me, that it was a consequence of the mode of death. I explained my views to him : he at once embraced the conjecture ; recognized its important consequences ; and requested of me, in future, to note accurately at every autopsy the state of congestion of the viscera in connexion with the mode of death.

I have since done so, and have found the following to be the rule, with the exceptions afterwards to be noted. *When the right side of the heart and the lungs are full of blood, the liver is what is called "nutmeg liver," or else uniformly congested ; while the left side of the heart, the brain and the kidneys, are exsanguineous. When the left side of the heart, and the arteries at the base of the brain, contain blood, the kidneys likewise freely bleed when cut into ; while the lungs and liver are pale and bloodless, in a comparative degree.*

It is not difficult to understand why this should be so. In syncope, the central organ of the circulation suddenly ceases its action, the blood remains distributed as in life, the arteries retain their contents, and the organs principally supplied by arterial blood, continue as they were before death ; so we find the brain and kidneys full of blood. In asphyxia or apoplexy the blood cannot be ærated, and therefore cannot penetrate to the left side of the heart ; the arteries continue to propel their contents into

the capillaries, but receive no compensating supply: therefore the venous system becomes gorged, whilst the arterial system becomes emptied. So we find organs chiefly supplied by venous blood, such as the liver and lungs, much congested; while the brain and kidneys are nearly destitute of blood.

The exceptions to these cases are the following, as far as I have seen: 1st. Cases when from chronic disease, or draining hæmorrhage, the whole vascular system is so exhausted, that congestion cannot be said to exist in any organ. 2ndly. Where the death has been compound, as when a patient long asphyxiating, suddenly dies of syncope; in this case some blood is found in the left cavities of the heart, the lungs are engorged, and the other viscera more or less congested. 3rdly. When congestion of an organ actually existed during life, and remains persistent after death. 4thly. Cadaveric engorgements.

BIBLIOGRAPHIC NOTICES.

A Treatise on Food and Diet, with Observations on the Dietetical Regimen, suited for disordered States of the Digestive Organs, and an Account of the Dietaries of some of the principal Metropolitan and other Establishments for Paupers, Lunatics, Criminals, Children, the Sick, &c. By JONATHAN PEREIRA, M.D., F.R.S. and L.S., &c. &c. &c.

THERE is, probably, no branch of medical practice less studied than dietetics, though it were difficult to say why, for no one can deny its importance in the treatment of many diseases, as dyspepsia, gout, diabetes, scrofula, phthisis, &c. &c.; neither is it good policy to neglect it, for assuredly the physician is in need of more fertility of resources, greater caution, and is under greater risk of contradiction and exposure (if in error) than in the merely medical part of his treatment. For while he is but seldom called on to gratify a craving for varieties in the *materia medica*, there is often a daily demand for changes of diet. So also, while his prescriptions are often much indebted to the “Mystery of Medicine,” rules of living are not so favoured, but are freely canvassed and compared with those of others in cases presumed to be similar; and if ever “comparisons are odious,” those must be so which the *farina* fed patient of Dr. A. institutes between his own case and that of his friend, who is fattening upon mutton and porter by directions of Dr. B. To be sure, starvation is sometimes necessary and very useful *if* patients will submit to it, but matters become serious if the doctor’s “peptic precepts” (being not more sound than satisfying) are found to be injurious when followed, and to be broken with impunity or advantage, and some authority is appealed to who decides, that if the patient will only consent to enjoy himself, he will recover his health, and that his enfeebled stomach will best digest that which most gratifies his palate. This is a case of every day occurrence, as is also its converse. But not only is there danger of being overruled by others, there is no part of our calling in which we are more apt to commit ourselves by

inconsistency or forgetfulness, or ignorance in matters of detail. We have known an eminent physician to lecture a lady on the serious consequences of touching brandy or such like stimulants, and within a week bid her take "cold without." Another who startled his patient by to-day freely permitting the glass of wine which yesterday he peremptorily prohibited. Such things are best avoided; and as to matters of detail, while we would not require every doctor to be a "Kitchener," he may at least avoid such mistakes as the ordering a common dish and at the same time prohibiting the principal ingredient; he need not, for instance, desire a custard pudding to be made, and forbid eggs to be used in it, or find fault with this having been done.

Doctor Pereira is the well-known author of the most learned and comprehensive work on *Materia Medica* in the language. His original intention, as he informs us, was to have treated the present subject in the same full and systematic manner, but he found it could not be done within reasonable limits, he has therefore excluded all natural historical details.

The plan of the present work differs very materially from that of former ones on the same subject. He commences with the consideration of the simple substances of which all bodies are composed, then treats at great length of the alimentary principles formed of those; then of compound aliments, classing them as solids, fluids, or condiments, and lastly of diet proper. Under the heads of 1st, Digestibility of food; 2nd, Nutritive qualities of foods; 3rd, Times of eating; 4th, Dietaries suited for different kinds of patients and institutions; 5th, Dietetical regimen suited for disordered states of the digestive organs.

In the first portion of his work our author treats on, 1st, The chemical elements of foods; 2nd, Alimentary principles; 3rd, Compound aliments. Of the fifty-five elementary substances at present known, about nineteen only have been found in organized bodies. Of these thirteen are constituents of the human body, and the same, therefore, must be the elements of our food. They are,

1. Carbon.	5. Phosphorus.	8. Choline.	11. Potassium.
2. Hydrogen.	6. Sulphur.	9. Sodium.	12. Magnesium.
3. Oxygen.	7. Iron.	10. Calcium.	13. Fluorine.
4. Nitrogen.			

These the author notices individually. As an example of his manner of treating this part of his subject, we select the most important of the elements of nutrition—nitrogen.

"Several circumstances have induced recent writers to conclude that *nitrogenised foods* are alone capable of conversion into blood,

and offorming organized tissues ; that, in fact, they only are the foods properly so called ; hence, Liebig has denominated them the plastic elements of nutrition. The *non-nitrogenised foods*, it is said, are incapable of transformation into blood, and are, therefore, unfitted for forming organized or living tissues. They are, nevertheless, essential to health, and Liebig asserts that their function is to support the process of respiration (by yielding carbon and hydrogen, the oxydation of which is attended with the development of heat), and some of them, he states, contribute to the formation of fat. These non-nitrogenised foods he calls *elements of respiration*.

Nitrogenised Foods, or Plastic Elements of Nutrition.

Vegetable Fibrine.
 „ Albumen.
 „ Caseine.
 Animal Flesh.
 „ Blood.

Non-nitrogenised Foods, or Elements of Respiration.

Fat. Pectine.
 Starch. Bassorine.
 Gum. Wine.
 Cane Sugar. Beer.
 Grape Sugar. Spirits.
 Sugar of Milk.

“ I propose now briefly to state those circumstances which have been adduced in favour of the opinion that nitrogenised foods alone nourish the tissues, offering, as I proceed, short commentaries on them.

“ 1. The first argument is, that as the animal tissues contain nitrogen *as one of their essential constituents, and as this element cannot be created in the system, it must be derived from either the food or the atmosphere ; but as it is not absorbed from the atmosphere in the vital process it must be obtained from the food.*

“ It appears to me that if it can be demonstrated that no nitrogen is absorbed from the atmosphere, the most important fact in favour of nitrogenized food is obtained. But has this been satisfactorily done ? I think not. Numerous assertions have been undertaken by different persons to determine this point, but the results have been most discordant. Some of the experimenters have declared that the nitrogen of the air is passive in respiration ; some have asserted that the nitrogen is generated in the lungs ; some that it is absorbed ; others that it is absorbed and exhaled—under certain circumstances absorption being most active, under others exhalation. What conclusion then, it may be asked, have cautious, unbiassed, and well-informed physiologists drawn from these discrepant assertions ? Muller, one of Liebig's countrymen, and the most distinguished physiologist of the age, observes, that ‘ the conclusion to be deduced from all these experiments seems to be, that during respiration nitrogen is both absorbed and exhaled by the blood.’ Dr. Carpenter concludes his account of the chemical phenomena of respiration with the following observation : ‘ thus there will be a continual exosmose of carbonic acid and nitrogen, and a continual endosmose of oxygen and nitrogen ; and the relative quantity of these gases exhaled and absorbed will be subject to continual variation from secondary causes.’ Lastly,

Dr. Bostock observes, ' that it is probable that the blood, as it passes through the lungs both absorbs and exhales nitrogen, the proportion which these operations bear to each other being very variable, and depending upon certain states of the system, or upon the operation of external agents.'

" Thus then it appears that some of the best systematic physiological writers admit the absorption of nitrogen; and it is, therefore, somewhat remarkable that both Liebig and Dumas should make such positive and unequivocal denials of it without adducing some new facts in proof of the accuracy of their own views. Their opinions must, I presume, be founded on the experiments of Dulong and Despretz. The first of these philosophers has given an account of seventeen experiments made upon animals: in fourteen cases he found that nitrogen was exhaled, in one that it was absorbed, in one that it underwent no change, and in one the result is not stated. Dulong, however, seems to think that farther experiments were wanting to verify these results, for he observes that the exhalation of nitrogen by the pulmonary surface was a phenomenon too remarkable to be passed over without an attempt being made to verify it in an indubitable manner; and I propose, he adds, to make some special experiments for this purpose. With regard to Despretz's experiments, it is deserving of especial notice, that whenever his conclusions militate against the opinions of Liebig and Dumas, they offer sundry objections to his experiments and conclusions; but where the result of his investigations coincide with their opinions, no objections are made to his experiments.

" That animals frequently, if not generally, exhale nitrogen can scarcely be denied; but the question is, whether when animals are supplied with food which contains a quantity of nitrogen insufficient for the wants of the system, nitrogen may not then be absorbed by the lungs? This question, it appears to me, remains yet to be solved; and I am not, therefore, disposed to adopt Liebig's unqualified assertion, that no nitrogen is absorbed from the atmosphere, the more especially as it is in opposition to the experiments of Priestly, Davy, Cuvier, Plaff, Henderson, Spallanzani, Edwards, and others, and to the generally received opinions of physiologists. It appears to me to be completely begging the question. The establishment or rejection of the theory of nitrogenised food is most essentially affected by the present argument, for, should it be shown that nitrogen is absorbed by the lungs, we have then another source for the nitrogen of the tissues, while, on the other hand, if nitrogen be not absorbed, the tissues can obtain this element from the food only.

" But there is another source of nitrogen which has not been hitherto noticed: I mean the ammonia of the atmosphere. Liebig has demonstrated the existence of the substance in the air; and has assigned strong reasons for believing that plants derive the nitrogen of their nitrogenised principles from it; the ammonia of the inspired air may, therefore, be one of the sources from whence animals derive a part, small though it be, of the nitrogen of their system.

" 2. *The second argument is, that non-nitrogenised foods alone are incapable of supporting animal life.* It has been found by experiments on animals, that gum, sugar, starch, or butter alone cannot preserve the health and life of animals. Magendie found that dogs fed exclusively on sugar and water died in from thirty-one to thirty-four days; and similar results were obtained with butter and with gum. Tiedemann and Gmelin have confirmed Magendie's statements: they found that geese fed on sugar and water, or gum and water, or starch and water, died in from sixteen to twenty-four days. This second argument has not, however, much weight, since it is well known that an exclusive diet of nitrogenized alimentary principles (gluten excepted) is also incapable of supporting animal life. Fibrine, albumen, or gelatine, taken separately, does not support life; even the artificial mixture of these principles is insufficient to preserve life; for dogs thus fed ultimately die with all the signs of complete inanition; while, on the other hand, a diet of muscular flesh, or of raw bones or of gluten exclusively is capable of complete and prolonged nutrition. It has been said, however, that both gum and sugar are capable of maintaining human existence.

" The asserted power of gum to support life rests principally on a story told by Hasselquist, of a caravan of more than a thousand persons travelling from Abyssinia to Cairo, and whose provision being exhausted, supported themselves for two months on the gum they were carrying as merchandize. But there are no details given to satisfy us of the accuracy of the conclusion which has been drawn from it. Altogether the case is not one to be relied on. Of the use of gum by the Moors, Negroes, and Hottentots, we have but little detailed and satisfactory information.

" The evidence of the nutritive property of sugar will be hereafter stated; but I may here mention that it applies principally to the use of this substance in an impure state, in which it contains nitrogenised matter; moreover, it is probable that nitrogenised food is in general used in combination with sugar.

" 3. *The third argument is, that the food of all animals, herbivorous and carnivorous, contains nitrogenised matters, identical in composition with the principal constituents of the blood and organized tissues of the animal body, and therefore the carbon of gum, sugar, and starch, and the carbon and hydrogen of the fats and oils are not required for the production of the blood.*

" One of the most surprising facts for which we are indebted to the school of Giessen is, that vegetables contain organic principles identical in composition with animal fibrine, albumen, and caseine. 'They are not merely similar,' observes Liebig, 'but absolutely identical, not only in having the same proportion of carbon, hydrogen, oxygen, and nitrogen, which the animal principles contain, but also in possessing the same relative amount of sulphur, phosphorus, and phosphate of lime.' Fibrine, albumen, and caseine, both animal and vegetable, dissolve in a solution of caustic potash. If to the resulting liquid acetic acid be added, the same precipitate is obtained which-

ever of the above three principles has been employed. The substance thus precipitated has been called by its discoverer Mulder, *proteine* (from *πρωτεύω*, I hold the first place). Its composition, according to Liebig is $C_{48} \cdot H_{36} \cdot N_6 \cdot O_{14}$. Fibrine, albumen and caseine are compounds of proteine and sulphur, and in the case of the two first of these bodies of phosphorus also.

ANIMAL.		VEGETABLE.	
Fibrine	= Proteine + S + Ph.	Fibrine	= Proteine + S + Ph.
Albumen	= Proteine + S ² + Ph.	Albumen	= Proteine + S ² + Ph.
Caseine	= Proteine + S.	Caseine	= Proteine + S.

“ ‘Vegetable fibrine and animal fibrine, vegetable albumen and animal albumen, hardly differ,’ says Liebig, ‘even in form; if these principles be wanting in the food, the nutrition of the animal is arrested; and when they are present, the graminivorous animal obtains in its food the very same principles on the presence of which the nutrition of the carnivora entirely depends.’

“ 4. The fourth argument is, *that the quantity of nitrogenised food which herbivorous animals consume, is amply sufficient for the growth and development of their organs and for the supply of waste.*

“ We are indebted to Boussingault for the demonstration of the truth of this statement, in the case of the cow and horse.

“ I have thus endeavoured to lay before my readers the opinions recently advanced with respect to the uses of nitrogenised and non-nitrogenised foods in the animal economy. These opinions may be thus briefly stated:—

“ 1. Nitrogenised foods are alone capable of conversion into blood and of forming organized tissues.

“ 2. Nitrogenised foods which contain proteine, as albumen, fibrine, caseine, and gluten alone, form the albuminous and fibri-nous tissues.

“ 3. Gelatine is incapable of conversion into blood, but it may, perhaps, serve for the nutrition of the gelatinous tissues (cellular tissue, membrane, and cartilage.)

“ 4. Non-nitrogenised foods support the process of respiration by yielding carbon, and in some cases hydrogen, to be burned in the lungs, and thereby to keep up the animal temperature.

“ 5. Some of the non-nitrogenised foods contribute to the formation of fat, the carbon and hydrogen of which are ultimately burned in the lungs, and thereby develope heat.

“ 6. With the exception of the substance of cellular tissue of membranes and of the brain and nerves, all the organic materials of which the animal body is composed are derived from vegetables, which alone possess the property of producing compounds of proteine.”

To these opinions Dr. Pereira raises several objections, in a discussion of some length, for which we have not space, but which we recommend to the notice of our readers.

After treating of the chemical constituents he proceeds to consider alimentary principles, which he thus classes :

- | | |
|-------------------------------|------------------------|
| 1. The Aqueous. | 7. The Acidulous. |
| 2. The Mucilaginous or Gummy. | 8. The Alcoholic. |
| 3. The Saccharine. | 9. The Oily or Fatty. |
| 4. The Amylaceous. | 10. The Proteinaceous. |
| 5. The Ligneous. | 11. The Gelatinous. |
| 6. The Pletinaceous. | 12. The Saline. |

“ The water contained in the system is derived from the aqueous drinks which we consume, as well as from the moisture contained in most of the solid substances employed as food. ‘ Water,’ says Dr. Prout, ‘ enters into the composition of most organized bodies in two separate forms, that is, water may constitute an *essential* element of a substance—as of sugar, starch, albumen, &c., in their *driest* states, in which case the water cannot be separated without destroying the *hydrated* compound; or water may constitute an *accidental* ingredient of a substance, as of sugar, starch, albumen, in their moist states; in which case more or less of the water may be frequently removed without destroying the essential properties of the compound.

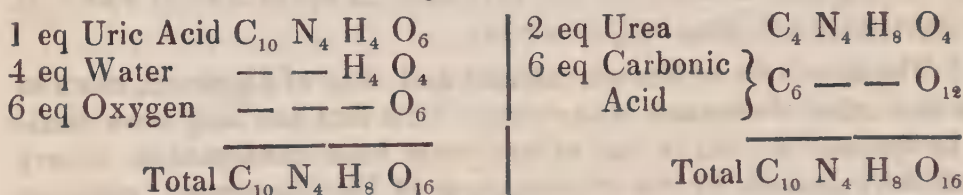
“ Water is, properly, the natural drink of all adults. It serves several important purposes in the animal economy: firstly, it repairs the loss of the aqueous part of the blood caused by evaporation and the action of the secreting and exhaling organs; secondly, it is a solvent of various alimentary substances, and therefore assists the stomach in the act of digestion, though if taken in very large quantities it may have an opposite effect, by diluting the gastric juice; thirdly, it is probably a nutritive agent, that is, it assists in the formation of the solid parts of the body. From the latter opinion, which I hold with Count Rumford, many will, however, be disposed to dissent.

“ It has not, indeed, been actually demonstrated that water is decomposed in the animal system, or, in other words, that it yields up its elements to assist in the formation of organized tissues; yet such an occurrence is by no means improbable. It appears from Liebig’s observations, that the hydrogen of vegetable tissues is derived from water; and it is not probable that the higher orders of the organized kingdom should be deficient in a power possessed by the lower orders. Dr. Prout appears to admit the existence of this power, but thinks that it is rarely exercised by animals. ‘ There is reason to believe,’ he says, ‘ that the decomposition of water either takes place when in a state of combination with other principles, or during the act of its separation or combination with such principles; and that water, as water, is rarely decomposed by the animal economy.

“ The water, which constitutes an essential part of the blood and of the living tissues, assists in several ways in carrying on the vital processes. ‘ In the blood,’ says Dr. Prout, ‘ the solid organized particles are transported from one place to another, are arranged in

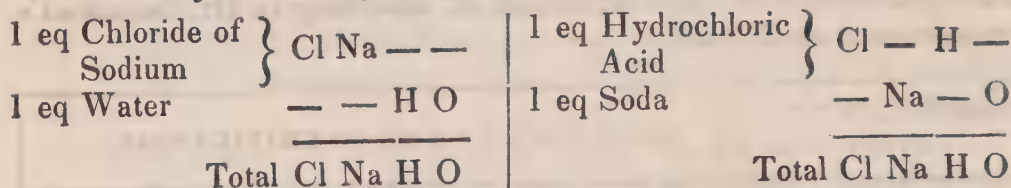
the place desired, and are again finally removed and expelled from the body chiefly by the agency of the water present. It is from water that the tissues derive their properties of extensibility and flexibility. Lastly, this fluid contributes to most of the transformations which occur within the body. As a solvent, it serves not only to aid digestion, as already noticed, but also to effect other changes. Thus, it is probable that the conversion of uric acid into urea by the action of oxygen, is effected by the agency of water, which holds the acid in solution; for in animals which drink much water, no uric acid but urea only is found in the urine, while in birds, which seldom drink, and in snakes, uric acid predominates.

Conversion of Uric Acid into Urea.



“ In some cases water combines chemically with substances to which, therefore, it contributes both its elements. Thus, the conversion of either cane sugar (C 12, Aqua 11) or starch (C 12, Aqua 10) into either sugar of milk (C 12, Aqua 12) or diebetic sugar (grape sugar, C 12, Aqua 14), can be effected only by the addition of water; so the hydrochloric acid of the gastric juice and the soda of the blood and bile are derived from common salt (chloride of sodium) by the aid of water.

Conversion of Chloride of Sodium into Hydrochloric Acid and Soda.



“ Water, considered as a dietetical remedy, may be regarded under a twofold point of view: first, with respect to its *quantity*; secondly, in reference to its *quality*.

“ In some maladies, as severe and acute inflammatory diseases, an almost unlimited use of aqueous fluids is admitted under the various names of slops, diluents, thin diet, fever diet, broth diet, &c.; but in some maladies it is necessary to restrict the quantity of fluids taken; in other words, to employ a *dry* diet. Thus, we employ this regimen when our object is to keep down the volume of the circulating fluid (as in valvular diseases of the heart), or to prevent thinness of the blood (as in aneurism of any of the great vessels, when our only hope of cure depends on the coagulation and deposition of fibrine within the aneurismal sac), or when we are desirous of repressing excessive secretion (as of urine in diabetes).

“ Attention to the *quality* as well as to the quantity of water employed as a drink is also important, not only for the palliation and

cure of some maladies, but also as a prophylactic in cases now considered with regard to quality, the waters furnished us by nature are conveniently divisible into three classes, viz.: 1st, common waters, or those employed as drinks, or for dressing food, or for other purposes of domestic economy; 2ndly, sea water; 3rdly, mineral waters, or those which belong to neither of the preceding classes, and which possess some peculiar properties derived from the presence of one or more mineral substances."

Of the author's manner of treating of these alimentary principles, we have a good example in the "oleaginous aliments."

After giving a list of substances in use as foods in which they occur, and a table of the ultimate composition of some of the fixed oils or fats, he proceeds:

"The fixed oils or fats are difficult and slow of digestion, more so than any other alimentary principles. This fact has long been familiar to dyspeptics; but it has of late years been confirmed in a very satisfactory manner by the experiments of Dr. Beaumont, made on a Canadian, who had a permanent artificial opening in the stomach, produced by a gunshot wound, at about two inches below the left nipple. By means of this aperture, Dr. Beaumont was enabled to introduce into the stomach various articles of diet, and from time to time to withdraw them, in order to examine the changes they underwent. He was also able to extract the gastric juice, and to perform various experiments on its digestive powers. He found that this secretion had a very slow and feeble action on fatty matters, whether contained in the stomach or otherwise. The mean time required for the chymification of fatty substances is, according to Dr. Beaumont's experiments, as follows:—

ARTICLES OF DIET.	MEAN TIME OF THE CHYMIFICATION.			
	IN STOMACH.		IN PHIALS.	
	Preparation.	H. M.	Preparation.	H. M.
Butter . . .	Melted . . .	3·30		
Mutton Suet .	Boiled . . .	4·36	Divided . .	10·0
Beef Suet (fresh)	Boiled . . .	5·30	Entire piece .	12·0
Olive Oil	Raw . . .	60·0

The first change which the animal fat suffers when swallowed, consists in its conversion into liquid oil by the warmth of the stomach. Very gradually this oil is converted into a creamy-looking chyme, containing myriads of oily globules, visible to the eye when aided by a microscope, so that the oil is, in fact, not a solution, but like the butter in milk or the oil in an emulsion, is held in suspension merely. Hence, oils or fats, if swallowed in the form of an emulsion or milk,

are more readily digested than if taken in the raw or undivided state. I have repeatedly subjected fatty substances to the action of an artificial digestive liquor, which readily dissolved coagulated white of egg or beefsteak. In no case, however, have I been able to get the fat or oil in solution. When yolk of egg boiled hard was submitted to its influence, the albuminous matter was readily dissolved; but not so the yellow fat of the yolk, which was merely diffused through the liquor, rendering it creamy or yellowish white and opaque.

“ Thus minutely divided, and perhaps otherwise somewhat changed, fat or fixed oil becomes absorbed by the chyloferous vessels; for it is well known that the opacity of the chyle depends entirely or principally on the presence of myriads of minute oily globules, which readily dissolve in ether.

“ The chymification of fatty substances is assisted by the presence of bile in the stomach. ‘ Bile,’ says Dr. Beaumont, ‘ is seldom found in the stomach except under peculiar circumstances. I have observed,’ he adds, ‘ that when the use of fat or oily food has been persevered in for some time, there is generally the presence of bile in the gastric fluids. The popular notion that oily or fatty foods ‘ cause bile’ in the stomach is not, therefore, so groundless as medical men have generally supposed. From Dr. Beaumont’s observations and experiments, it appears that oil is slowly and with great difficulty acted on by the gastric juice; but that the admixture of bile greatly accelerates chymification. Perhaps the alkaline property of the bile partly contributes to this effect.

“ In many dyspeptic individuals fat does not become properly chymified. It floats on the contents of the stomach in the form of an oily pellicle, becoming odorous and sometimes highly rancid, and in its state excites heartburn, most disagreeable nausea and eructations, or at times actual vomiting. It appears to me that the greater tendency which some oily substances have than others to disturb the stomach, depends on the greater facility with which they evolve volatile fatty acids, which are for the most part exceedingly acrid and irritating. The unpleasant and distressing feelings excited in many dyspeptics by the ingestion of mutton fat, butter, and fish oils, are in this way readily accounted for, since all these substances contain each one or more volatile acids, to which they respectively owe their odour. Thus, mutton fat contains hircic acid; butter no less than three volatile fatty acids, viz. : butyric, capric, and caproic acids, while train oil contains phocenic acid.

“ The influence of heat on fatty substances effects various chemical changes in them, whereby they are rendered more difficult of digestion and more obnoxious to the stomach. Hence those culinary operations in which fat or oil is subjected to high temperatures, are objectionable in the preparation of foods for persons with weak stomachs. On this account dyspeptics should be prohibited from employing foods prepared by frying; as in this operation the heat is usually applied by the intermedium of boiling oil or fat. Fixed oils give off while boiling carbonic acid, a little inflammable vapour, and

an acrid volatile oil called acroleine or acroleon, while the fatty acids of the oils are in part set free. It has always appeared to me that cooked butter proves more obnoxious to the stomach than cooked olive oil. This I ascribe to the facility with which, under the influence of heat, the acrid volatile acids of butter are set free. The fat of salt pork and of bacon is less injurious to some dyspeptics than fresh animal fats. A somewhat similar observation has been made by others. 'There is one form of impaired digestion,' says Dr. Combe, 'in which the fat of bacon is digested with perfect ease, where many other apparently more appropriate articles of food oppress the stomach for hours.' This must depend on some change effected in the fat by the process of curing it, for in the cases which have fallen under my observation, the fat of salt pork or of bacon was the only kind of fat which did not disturb the digestive organs. Dr. Combe, however, suggests that it may depend upon the presence of bile in the stomach; on this explanation, however, other fats should be equally digestible, which, according to my experiments, they are not.

"Fixed oil or fat is more difficult of digestion and more obnoxious to the stomach than any other alimentary principle. Indeed in some more or less obvious or concealed form, I believe it will be found the offending ingredient in nine-tenths of the dishes which disturb weak stomachs. Many dyspeptics, who have most religiously avoided the use of oil or fat in its obvious or culinary state (as *fat meat, marrow, butter, and oil*), unwittingly employ it in some more concealed form, and, as I have previously witnessed, have suffered therefrom. Such individuals should eschew the *yolk of egg, livers* (of quadrupeds, poultry, and fish), and *brains*, all of which abound in oily matter. *Milk*, and especially *cream*, disagree with many persons, or, as they term it, lie heavy at their stomach, in consequence of the butter they contain. *Rich cheese*, likewise, contains butter, and on that account is apt to disturb the stomach. *Fried dishes* of all kinds are abominations to the dyspeptic, on account of the oil or fat used in their preparation. *Melted butter, buttered toast, butter cake, pastry, marrow puddings, and suet puddings* are, for the like reason, obnoxious to the stomach. Several kinds of *fish*, as *salmon, herrings, sprats, and eels*, abound in oil, and, on this account, form objectionable foods for the dyspeptic; moreover, the mode of cooking (frying) some dishes, and the condiment (melted butter) used with them, often render this kind of food injurious. The *oily seeds*, as *nuts, walnuts, and cocoa nuts*, are very indigestible; *chocolate*, prepared from the oily seeds of the *Theobroma Cacao*, is, therefore, not a fit article of food for a delicate stomach. *Hashes, stews, and broths* frequently prove injurious, from the oil or fat contained in them. In preparing broths for such persons, therefore, the fat should be carefully removed by skimming."

The largest portion of the work is devoted to the consideration of compound aliments, or foods and drinks, and is, of course, the most interesting and practically important. Animal

food is derived from the classes *mammalia*, *birds*, *reptiles*, *fishes*, *crustacea*, *mollusca*. The following is his account of the chief dish we obtain from the class Reptiles, *turtle*:—

“ The green or edible turtle, above referred to, is greatly prized by the epicure. In the markets of Jamaica, it is bought and sold like beef. To the tropical navigator it is highly important, as forming a valuable article of food ; the female with egg is most esteemed. In this country the principal use of the turtle is for the preparation of soup. The large shield of the turtle’s back (*Dorsal shield*) is called by naturalists the *Carapace*, by cooks the *Callipash*; while the shield of the belly (*ventral* or *sternal shield*) is denominated by naturalists the *Plastion*, by cooks the *Callipee*. When these two shields have been removed from the animal, preparatory to dressing, they are scalded, to enable the cook to separate the scales or shell ; they are then boiled until the bones can be separated, the liquor being kept as a kind of stock. The softer parts of the shield (thus deprived of their bones), as well as portions of the fins, are, when cold, cut into square or oblong pieces, which constitute the favourite glutinous or gelatinous morsels in turtle soup, and which by turtle eaters are often erroneously supposed to be green fat. They considerably resemble the pieces of the scalp of the calf contained in mock turtle. The pieces from the callipash are dark coloured externally, and are sometimes called *black* or *green* meat ; while those from the callipee are white externally. The *flesh* of the turtle is sometimes dressed at taverns in London as a steak, but it is more commonly used in the preparation of soup. The *fatty tissue* (*green fat*) of the turtle is of a greenish yellow colour, and on this account the animal has been termed the *green* turtle. The lard or fat, when melted out of the tissue in which it is naturally contained, is of a warm yellow colour, and resembles both in appearance and taste marrow. The fat is used in the preparation of the soup ; but many of the turtles used in London contain very little fat. The green fat is said to communicate a green colour to the urine. Turtle is highly nutritious, and probably when plainly cooked is easy of digestion ; but when taken in the form of the highly-esteemed “ turtle soup,” is very apt to disagree with dyspeptics.”

The food derived from the *vegetable* kingdom he considers under two classes,—that from flowering plants and that from flowerless plants. The first order of the former class is *seeds*, and of these the most important are the *cereal* grains, of which the first in place is *wheat*. Much valuable information is given on the different farinaceous foods prepared from wheat (as semolina, songee, macaroni, vermicelli, &c.) Some of which, as the farinaceous food for infants, sold under the names of Hards’s and Densham’s, are prepared from wheat flour only, or this mixed with a small proportion of barley (a formula for the latter

is given in a foot note at page 309). Bread, fermented and unfermented, are treated of at great length.

“A most delicious unfermented bread,” says the author, “equal in lightness to any bread prepared by the fermented process, was made in my presence by the cook of Mr. John Savory, of New Bond-street, according to the following formula:—

Flour 1 lb.

Sesqui-carbonate of soda 40 grains,

Cold water half a pint or as much as may be sufficient,

Muriatic acid of the shops 50 minims,

Powdered white sugar a teaspoonful.

Intimately mix the soda and sugar with the flour in a large basin, by means of a wooden spoon; then gradually add the water, with which the acid has been previously mixed, stirring constantly, so as to form an intimate mixture very speedily; divide into two loaves, and put into a quick oven immediately. If any soda should escape the action of the acid it causes a yellow spot, which, however, is more unsightly than detrimental. The sugar can be omitted, if thought desirable.

“The unfermented bread possesses several advantages over the ordinary fermented bread. In its manufacture both time and trouble are saved, and all risk of vitiating the bread, by the use of inferior yeast or by carrying the fermentation too far, thereby avoided. It is well adapted for the use of invalids and dyspeptics, with whom the ordinary fermented bread disagrees. In urinary maladies, likewise, it deserves a trial. In its porosity and lightness it is superior to biscuits, since it is more speedily permeated and more readily acted on by the gastric juice.”

Want of space prevents our making farther extracts. We cordially recommend the book to the notice of our readers. It contains a mass of matter—scientific, practical, and interesting—and will well repay their diligent perusal.

A Practical Treatise on Organic Diseases of the Uterus. By JOHN C. W. LEVER, M.D., Member of the Royal College of Physicians, London; Assistant Accoucheur at Guy's Hospital, and one of the Lecturers on Midwifery at that Institution.

THIS, so far as it goes, is a very useful work, containing, within a short space, considerable practical information, arranged in a clear and yet concise manner. It was the essay to which the Fothergillian medal for 1843 was awarded, and thus recommended to our notice, we shall take a hurried glance through it.

The writer's opportunities for observation were numerous; from one to two hundred cases of functional or organic disease having been weekly submitted to his inspection. From such

an extensive field for experience, we confess we should have expected a little more originality, or that some additional light would have been thrown on some of the more obscure points of his subject.

Before entering upon the details proper, our author puts forth four general propositions intimately connected with his subject, viz., firstly, as to the relative proportion of functional to organic uterine diseases; secondly, whether married or unmarried are more liable to structural changes; thirdly, does the diathesis accompanying or predisposing to organic disease impair the faculty of conception? and fourthly, conception having taken place, does the organic disease interfere with the vitality of the offspring? With respect to the first, from his own experience, and information obtained from authorities worthy of credit, resident in warm climates, as also in situations where heat and cold in turn are most intense, he has ascertained that functional diseases amounted to 65.2 per cent., organic diseases bearing the proportion of 34.7 per cent., but that of these last a considerable number were preceded by dysmenorrhœa.

The proportion of married females affected with organic diseases to unmarried, he states to be 93.68 per cent., and "this is to be expected, he adds, considering the part the uterus has to perform, its turgescence during copulation, its increase of structure and development during pregnancy, and the accidents to which it is liable (especially the mouth and neck) during the process of parturition." The third proposition is a very interesting one.—Does the diathesis accompanying organic disease impair the faculty of conception? His observations lead him to think it does not, the childbearing women of those affected with various uterine organic diseases amounting to 91.09 per cent. This is a remarkable fact, one tending, we think strongly, to prove the uterus to be merely a recipient, and, as it were, educating organ. Still more remarkable, however, is the result of his investigations as to the influence that organic diseases exercise over the vitality of the offspring, Eighty-one women conceived 553 times; forty-three conceptions terminated in abortion, and 510 or 92.3 per cent. were born at the full term; and yet of these twelve only were still-born, three in case of carcinoma uteri; two of fungoid disease; one of polypus, and six of hard tumour, shewing the liability of the foetus to have been principally affected by difficulty in the delivery, arising from want of dilatation or mechanical hindrance to its exit.

Treating of the methods of examination when speaking of

the use of the speculum, he very properly abstains from any effort to defend this mode of investigation, satisfied, no doubt, that it, at least now-a-days, requires none. Medical men are, at length, beginning to give over their maudlin delicacy on this subject. Arguments deduced from abuse should not be suffered to affect the use of this means of exploring disease. Far be it from us to undervalue or outrage the feelings of delicacy which so beautifully adorn the sex that are the subjects of the diseases now before us, still we cannot but think that an unjustifiable outcry has been raised on this point, and happy are we to see it gradually giving way to the reasonings of common sense. It would have been as well, however, as this matter has excited so much attention, if our author had been a little more particular in his instructions for its application, his being a practical treatise, and so much time having been expended in describing the other modes of examination.

By many it is preferred to have the patient lying on her back, with her lower extremities drawn up, as in the lithotomy position. This, certainly, affords a greater facility for examining the state of the cervix, os uteri, and upper portion of the vagina; but in most cases it will be sufficient to have her placed in what is technically designated the *obstetric position*, or lying on her left side, an additional reason for which is, that to this she will more readily submit. This is the position our author considerately selects, and when so placed, if a large sheet be thrown over the whole figure, with an aperture in it corresponding to the vulva, sufficiently large to admit of the passage through of the speculum, the whole of the investigation may be conducted without the slightest indecent exposure, and the patient herself will feel, in some degree, soothed by the delicacy thus manifested under the annoyance naturally arising from the necessity of having to submit to such an ordeal.

The enumeration of the general symptoms of organic diseases is good and faithfully given, and affords evidence of close and attentive observation, carrying the reader from the first and most simple demonstration of derangement of function on to the last stage of self-evident organic disease, and constitutional sympathy.

Of organic diseases of the uterus he treats under three distinct heads.

First, inflammation of the uterus, unimpregnated and impregnated, with its consequences, as hypertrophy, engorgement, induration, simple ulceration, and enlargement of the glands; secondly, specific diseases, by which he means these tumours admitted not to possess malignancy, as polypus, fibrous tumour

(of which as to their non-malignancy we are of opinion with him), strumous tubercles, and syphilis, with gonorrhœa uteri; and thirdly, malignant diseases, comprising cauliflower excrescence, corroding ulcer, melanosis uteri, and carcinoma.

The section on acute inflammation of the unimpregnated uterus, the causes and treatment thereof, contains nothing new; he briefly notices, however, two cases where inflammation followed upon the operation for imperforate hymen, which we deem important. In one the result proved fatal, attributable in great part, we cannot but think, to the unwarrantable officiousness of the attendant who "not content with giving exit to a considerable quantity of treacly fluid, injected warm water into the uterus to wash out all the collected secretion." In the other, treated by Dr. Lever himself, though but a small opening was made, inflammation set in, which was, however, successfully combated. Under such circumstances we cannot be too cautious in our interference, the uterus being at this time extremely susceptible.

Of inflammation of the impregnated uterus terminating in abscess we find two instances given, in one of which, under his own care, the abscess made its way into the vagina on the right side of the neck of the womb, and getting vent there, the patient, who was six months pregnant, recovered without miscarriage ensuing; the abscess healed in three weeks, but some short time after having taken a journey, during which she encountered much jolting and fatigue, premature labour was the consequence, attended with excruciating torture—the child presented footling, and was putrid. We should wish our author had stated at what time it had ceased to show signs of vitality. This lady recovered rapidly notwithstanding, and twelve months after was again confined safely, but little impediment being offered to the dilatation of the os uteri. The other patient (a case quoted from Bonet, *Sepulchret.* vol. ii.) died, worn out by a protracted labour of four or five days' duration. A large abscess, filled with very putrid pus, was found in the neck of the uterus.

We quite agree with Mr. Lever in his preference of local to general depletion, in the treatment of inflammation thus occurring. This, followed up by mercury given so as to slightly affect the mouth, which is to be kept up for some time, with repeated blistering, he has found efficacious. Cases of this kind, especially where injury has been the exciting cause, we have seen terminate in morbid adhesion of the placenta. In two instances we have had an opportunity of following up such, and on the introduction of the hand for the separation and removal of this mass, we found its adhesion to correspond with the site of the

original injury and subsequent pain. The appearance of hysteritis after parturition our author seems too narrowly to limit to merely locally exciting causes, as injection of cold water, undue pressure, the unguarded use of instruments,—that it may be, and is at times, thus excited, we of course admit, but we are fully borne out by experience in stating it will arise independent of any of these circumstances. Its symptoms, from whatever cause arising, are well given, save that in simple hysteritis we rarely meet with sickness of stomach and vomiting of bilious fluid; when these symptoms are present the peritoneum is found to be generally involved. This complication will be much more frequently met with than simple hysteritis, and would seem to have occupied our author's attention while engaged on this part of his work, as the whole description and recorded post mortem appearances would lead us to infer; but had he gone further into detail here, it would have entrenched too much upon the space he allowed himself for his more legitimate subject. His treatment is judicious, but we cannot at all agree with him in his low estimate of mercury in this form of attack. Possibly he did not give it early enough in the disease. We have seen, on a large scale, the best effects follow upon its steady exhibition by the mouth, but more especially by inunction. . . . The use of antimonials combined with sedatives, particularly in the form of Pulv. Jacob. ver. with the Pulv. Ipecacuan. comp. has been, we think, too much disregarded. Of chronic inflammation of the body of the uterus, Mr. Lever has seen several cases, where this malady was attributable to the injudicious exhibition of the secale cernutum, one instance of which he gives. This is a powerful agent, and, like most such, too apt in inconsiderate hands to be abused. We cannot say we have witnessed such consequences, but we rather think we are less prodigal in its administration than our neighbours on the other side the channel. He states that patients who have thus suffered are not likely to reconceive; does he mean to attribute this result to the use of the ergot or to some morbid alteration of structure, a consequence of the disease itself? In his directions as to treatment he does not sufficiently dwell upon the carrying out of a mild mercurial course; “alterative purgatives to prevent constipation” he recommends, but we rather think this an oversight, for in the two cases detailed he gives a mild mercurial, as Hyd. c. cret. in one, and Pil. Hydrarg. in the other, each night for six weeks. The Pil. Calomel. Comp. with Ext. comp. Hyosciam. each night we consider a nice combination, and followed by Iodine in different forms it will be found useful. The prohibition of sexual intercourse is a point

of vita. importance, and one by no means sufficiently attended to in the treatment of uterine diseases.

We pass on to chronic inflammation of the unimpregnated uterus with its sequelæ; these, with their treatment, are accurately detailed. Dr. Lever thinks advantage may be derived from acting on the mucous membrane of the intestines by means of neutral saline purgatives, after the active symptoms have been removed by suitable treatment. With these he combines tonics and sedatives, of the latter class of medicines giving the preference to *hyosciamus*, viz:

℞ Magnes. sulph. ʒss. ʒi.

Tinc. Hyosciam. m. xx-xxx in Infus. Gentian comp.

Inf. Calumb. vel Infus. Cascarillæ ter in die.

From such a combination he states he has seen good effects. When induration is met with, he insists on the necessity of satisfying ourselves, before resolving upon the treatment, that it is the result of chronic inflammation, and not the commencement of malignant disease. The former is recognized by its regular feel and the history of the case, while the induration in the latter is in nodules, the malignant deposit being generally secreted in patches. He admits, however, that the latter is frequently observed to follow on the former. This accuracy of diagnosis, however, has no influence on the treatment, inasmuch as that advised by him in simple induration is the same as is recommended by Ashwell and Montgomery in the first stage of cancer.

The hemorrhage that at times attends upon simple ulceration of the os and cervix uteri is not noticed. It is merely stated that "the ulcers will bleed on the slightest touch," and "the discharge is usually yellow and streaked with blood." We have witnessed cases where there was considerable hæmorrhage compared with the amount of organic lesion, requiring the internal and external exhibition of astringents for its suppression, and yet without accompanying scirrhus. In these the ulceration extended up within the os uteri which was patulous. This form of disease is only discoverable by the speculum, tactile examination availing comparatively nothing. When the disease has become chronic, which is the form most frequently submitted to the notice of the practitioner, we have seen great improvement in the appearance of the diseased surface from the application of a saturated or nearly saturated solution of nitrate of copper; Mr. Lever's favourite caustic is the solid nitrate of silver.

Specific Diseases—Polypus Uteri.—Mr. Lever takes occasion, from the fact of the hæmorrhage being as considerable when the tumour is small as when it is of a large size, to infer

the conclusion that the blood does not escape from the tumour itself, but from the uterine surface. This is, we believe, the opinion generally entertained at the present day. In cases of frequently recurring hæmorrhage, we cannot too strongly insist on the necessity for repeated and varied (as to position) vaginal examination. Nor shall we at all times be able to detect a polypus where such exists. It has happened that one practitioner has succeeded in discovering the *causa mali* where previous investigators had failed, and this not from any particular individual accuracy of touch, but from the circumstance of the tumour having, during the interval between the two examinations, descended (from whatever cause it may be, vomiting, or such like), and come within reach of the last explorer. Mr. Lever states he has seen as many uterine polypi sensible as insensible. This does not agree with general observation.

In the operation for the removal of polypi by ligature, he prefers whipcord, from its undergoing, when moistened, an increase of thickness, and diminution of length, and thus having, to a certain extent, the power of tightening itself. This we consider rather an objection to its use. We have always the power of tightening our ligature, and we know that sometimes, even within some hours after its application, it has been necessary to loose it a little from a disagreeable sensation experienced, amounting almost to pain, though nothing more than the stem of the polypus had been included within its grasp. On this account, we prefer the dentist silk, which answers admirably well, and is very manageable. When the polypus is very large, so as to almost completely occupy the vaginal cavity, it will not be always possible, at least without causing much pain, to bring the moveable portion of the canula round it posteriorly. Under such circumstances, by leaving the loop of the ligature sufficiently large to encircle the whole bulk we may succeed by passing up first, anteriorly, the double canula, retaining it fixed there, and then with the aid of our fingers (which will be found more pliable than the unyielding instrument) getting the loop of ligature over it posteriorly. In soft polypi, he states the ligature should be tightened very gradually for fear of hæmorrhage. This precaution should, we think, be observed in all, though it is only in this form that the discharge is likely to be so increased. Where pregnancy has coexisted, and the polypus tumour has not been discovered till it so interfered with the process of parturition that its removal or embryotomy has become absolutely necessary, to effect the delivery the conjoined operation by ligature and incision must be adopted.

Polypus, as also fibrous tumours, are more frequently met

with amongst the unmarried than the married. With either of them, however, we at times find pregnancy complicated. When this occurs with fibrous tumour it will be for the most part found that the patient has married late in life, generally speaking, but not too late to conceive. Mr. Lever agrees with Ashwell in limiting repeated hæmorrhages, as attending on the existence of fibrous tumour, to those cases where it is situated between the mucous membrane and the proper uterine tissue, becoming, according to the former, polypus-like, pedunculated, and protruding into the uterine cavity. Ashwell says, that "a genuine hard or fibrous tumour never becomes a pediculated polypus, I can scarcely believe," though he admits a hard fibrous tumour may descend into the uterine cavity, pass out through its cervix and os into the vagina, and from the bleedings it gives rise to, justify and even demand its removal by the same means as in polypus. This, we confess, we consider mere hair-splitting, the bulk of its stem, as Lever would call it, or uterine attachment, according to Ashwell, constituting the difference between them.

The diagnosis of fibrous tumours is well given, and deserves attention. In the treatment he has not so much confidence as Ashwell in the benefit to be derived from the use of iodine, the latter author considering that when the tumour was confined to the walls the exhibition of this medicine has succeeded in effecting "a restraint of the disease within its proper limits," and in hard tumours of the cervix and indurated puckering of the os uteri, in causing a "melting down and cure."

Corroding Ulcer.—"This disease commences in the cervix uteri, extending thence downwards to the os and upwards to the fundus, appearing to have its origin in the glandular structure around the neck." Ashwell thinks it referrible to inflammation, and that of a specific character. He likens it to lupus. The diagnosis can alone be formed from a vaginal examination. Being most easily confounded with cancer, it is distinguished from it by the mobility of the uterus, and the complete absence of morbid deposit. In the treatment of this disease, we have found great advantage and comfort from the solution of the chloride of lime diluted as an injection, acting both as a styptic and correctant of foetor, which in this disease is most distressing.

For an interesting case of melanosis uteri, a rare disease, we must refer our readers to the work itself. The section on carcinoma will be perused with satisfaction. Of its pathology he gives the opinions of most authors of eminence. Its hereditary nature he admits, but denies that it can be communicated by infection or inoculation. Such, at least, has been the conclu-

sion to which he has come from close attention paid for many years to this question. In not one instance was he able to detect the supervention of cancer in the husbands of females labouring under ulcerated carcinoma; and this, too, from some experience, his records containing more than 350 cases of this disease. As to its exciting causes, he denies the great weight attached to syphilis, as also violence; considering that to constitute this latter an exciting cause there must have been already existing the predisposing cancerous diathesis. Why it should be more frequently met with amongst the married than the unmarried he has already explained. That there has been, however, a previous deranged state of the uterus itself favourable to the development of the disease on the exciting cause being applied, is shewn by the fact, that most of these affected with carcinoma will be found to have been in early life subject to derangements of uterine health, and especially congestive dysmenorrhœa.

We shall not dwell upon the treatment further than to notice his predilection for the *Liquor Potat. Arsenit.* in all the stages of the complaint (in the first after other treatment suited to its immediate condition shall have been adopted.) He says it “lessens pain, restores the tone of the system, and improves the patient’s constitutional powers.”

He gives an interesting case of encephaloid carcinoma uteri, during the progress of which phlebitis became developed; of which complication he states he has met with three or four instances. “It is remarkable that the phlebitic symptoms first appeared in the left superior extremity, and thirteen days after the right inferior extremity became engaged. Some blood, drawn from a vein of the affected arm was submitted to a microscopic examination by Dr. T. Williams, the result of which was, that the red corpuscles alone presented indications of morbid change. No pus globules, nor any other morbid element could be observed.” For a more accurate account of this investigation, we refer our readers to the work itself.

Mr. Lever, we think, very properly censures the practice recommended by Liebold, in pregnancy complicated with cancer, of introducing the hand, and delivering by version, shewing the remedy to be as bad, if not worse than the disease. • All such cases must be as little as possible interfered with; if the lever or forceps can be passed without violence delivery may be thus effected with advantage, but incisions or other mechanical violence inflicted on the diseased structure, will hardly fail to recoil upon the head of the hardy operator.

We shall now bring this notice of Mr. Lever’s book to a close, having been tempted to go more minutely into it than we had at first intended. We can assure him that if we have not

obtained much additional information, we have enjoyed considerable satisfaction from its careful perusal. We feel convinced that his expectations will be amply realised by "his statements proving useful and instructive to students and junior members of the profession," to whose particular notice we strongly recommend it.

Medicines—their Uses and Mode of Administration, including a complete Conspectus of the three British Pharmacopœias, an Account of all the New Remedies, and an Appendix of Formulæ. By J. MOORE NELIGAN, M.D., Physician to Jervis-street Hospital, and Lecturer on Materia Medica and Therapeutics in the Dublin School of Medicine. Dublin: J. Fannin and Co.

WE have already honestly stated our opinion of the works on Materia Medica that have lately issued from the British Press. Dr. Pereira's work is a laborious and learned compilation, containing a fund of information on the commercial varieties of drugs, a branch of materia medica, that the author's denizenship in the great metropolis of trade gave him peculiar opportunities of studying. Dr. Christison's Dispensatory is very valuable on account of the great amount of original information on the details of practical pharmacy which it contains. Both these works are admirable in their way, and do great honour to the schools of London and Edinburgh; yet, we confess, that we think it probable that the unpretending volume at the head of this article, will be found more practically useful to the student and practitioner, than the ponderous tomes we have referred to. It may be, that we are jealous for the credit of the Dublin schools, but we own that we are glad that a good book on Materia Medica has emanated from the Dublin Press.

And this *is* a good book; it is small in size and cheap in price, yet it contains just the quantity and the kind of information that the practitioner and the student require. It contains the physical and chemical properties of drugs, their mode of preparation, their adulterations, their therapeutical effects, their doses and modes of administration, their incompatibles, and, if poisons, their antidotes and methods of treatment. We find these topics treated in as complete a manner as the present state of science will permit. Moreover, the author deserves thanks for arranging the various medicines in a classification, founded upon their physiological effects; this arrangement without doubt is imperfect, but its imperfection is the fault of

the state of science and not of the author; and the classification adopted has, at least, the merit of being simple, and is calculated to be useful. But, more than all, does Dr. Neligan merit our thanks, for having the courage to adhere to his subject; for daring to omit, what every other work on materia medica is loaded with, long botanical and chemical descriptions, that have no more relation to the science than has geography or astronomy. Surely we have Kane's admirable work for all that relates to chemical theories; and Churchill and Stephenson or Lindley's *Flora Medica*, for botanical descriptions, and is it not too bad to be forced to wade through pages on these matters, when we want to ascertain the characters of a pure drug, or the dose in which it is to be exhibited.

To prove that we are not speaking too favourably of this work, we quote the following extracts from the article on iron.

“ FERRI AMMONIO-TARTRAS.—*Ammonia-tartrate of iron.*

“ P. & C. P.—This preparation, (which has been recently introduced into the practice of medicine, and is not contained in any of the pharmacopœias), is met with in the form of brilliant scales, semi-transparent, of a beautiful reddish-brown colour. It is odourless, and has a sweetish, slightly chalybeate taste. It is soluble in about twice its weight of water at 60°, and in a much less quantity of boiling water. It is insoluble in absolute alcohol and in ether. It is composed of 1 eq. of tartrate of per-oxide of iron, 1 of tartrate of ammonia, and 4 of water.

“ PREP.—‘Tartaric acid, 100 drachms; sesquicarbonate of ammonia, crystalline, 39½ drachms; sesqui-(*per*)-oxide of iron, 53½ drachms; muriatic acid, 180 drachms; solution of ammonia, and water, of each, q. s.; dissolve the tartaric acid in cong. i. of water, and add the sesquicarbonate of ammonia gradually. Dissolve the sesquioxide of iron in the muriatic acid by means of a gentle heat; dilute the solution with Ovj. of water, and add a sufficient quantity of solution of ammonia to precipitate the oxide. Separate this on a flannel filter, wash it with water, until the washings pass tasteless; and add it to the solution containing the bitartrate of ammonia, then apply a gentle heat, by means of a water-bath, until the whole of the sesquioxide of iron is dissolved, and a deep reddish-brown solution results. Lastly, evaporate this solution, by means of a water-bath, to dryness.’—MR. PROCTER, in the *American Journal of Pharmacy*.

“ TH. E.—This is an excellent preparation of iron, void of all astringency. It is peculiarly suited as a tonic for those derangements of the uterine organs in which the ferruginous salts are indicated. Its not disagreeable taste, its solubility in water, and the permanency of its composition, give it an advantage over most of the other preparations of iron.

“ D. & M. OF ADM.—Gr. v. to gr. viij. in the form of powder pill, or solution; or made into a bolus with honey.

“ INCOMP.—The mineral acids; and all astringent vegetable preparations.

“ FERRI BROMIDUM.—*Bromide of Iron.*

“ PREP.—‘ Bromine, and clean iron filings, of each, equal parts ; heat together under water, till the fluid becomes of a greenish colour ; filter and evaporate to dryness,’ MAGENDIE.

“ Bromide of iron is of a brick-red colour, and has a disagreeable, styptic, metallic taste. It deliquesces rapidly when exposed to the air, and is very soluble in water. It has been used on the Continent, it is stated, with much success, in hypertrophy of the uterus, and in glandular enlargements. Dose, gr. iij. to gr. viij.—*Pilulæ Ferri Bromidi*, WERNECK. (Bromide of iron, 3i. ; extract of liquorice, q. s. ; mix and divide into 60 pills). One or two, morning and evening.

“ FERRI CARBONAS SACCHARATUM, E.—*Saccharine Carbonate of Iron.*

“ P. P.—A grayish or bluish-green powder ; inodorous, with a sweetish, strongly chalybeate taste.

“ C. P.—This preparation is composed of ‘ carbonate of protoxide of iron in an undetermined state of combination with sugar and sesquioxide of iron,’ *Ed. Phar.* Sugar or other saccharine matter prevents the decomposition of the carbonate of the protoxide of iron, which always takes place rapidly from the conversion of the protoxide into the sesquioxide and the escape of carbonic acid. The saccharine carbonate remains unchanged for a long time even when exposed to the air. It is insoluble in water or alcohol ; but dissolves completely in muriatic acid with effervescence.

“ PREP.—*Edin.* ‘ Sulphate of iron, ℥iv. ; carbonate of soda, ℥v. ; pure sugar, ℥ij. ; water, ℥iv. ; dissolve the sulphate and carbonate each in Oij. of the water ; add the solutions and mix them ; collect the precipitate on a cloth filter, and immediately wash it with cold water, squeeze out as much of the water as possible, and without delay, triturate the pulp which remains with the sugar previously in fine powder. Dry the mixture at a temperature not much above 120°.’

“ *Adulterations.*—This preparation is not liable to adulteration ; that it has been properly prepared may be known by ‘ its colour being grayish-green ; and by its being easily soluble in muriatic acid, with brisk effervescence,’ *Edin. Phar.*

“ TH. E.—Carbonate of the protoxide of iron is one of the best and most active of the ferruginous salts, and the permanency of its composition in the form now described renders this preparation a valuable addition to the *Materia Medica*. It is peculiarly adapted for children and delicate females when the employment of a chalybeate tonic is indicated. Carbonate of iron held in solution by an excess of carbonic acid is the active principle of many chalybeate mineral waters.

“ D & M. OF ADM.—Gr. v. to gr. xxx. in the form of powder or made into an electuary with syrup or honey.—*Pilulæ Ferri Carbonatis*, E (Saccharine carbonate of iron, 4 parts ; red-rose conserve, 1 part : beat them into a proper mass, to be divided into five grain pills). Dose, 1 to 4 pills.—In the following preparations, the carbonate of iron, prevented from undergoing decomposition by the presence of saccharine matter, is the active ingredient :—*Mistura Ferri composita*, D. L. E. (Myrrh, powdered, 3i. (3ij. L. E.) ; co-cho-

nate of potash, gr. xxv. (3i., L. E.); rose water, 3viiss. (f3 xviiij., L. E.); sulphate of iron, powdered, 3j. (3ij., L.); spirit of nutmeg, 3ss. (f3j., L. E.); pure sugar, 3i. (3ij., L. E.) rub together the myrrh with the spirit of nutmeg and the carbonate of potash, and to these, while rubbing, add first the rose water with the sugar, then the sulphate of iron. Put the mixture immediately into a proper glass vessel, and stop it). This mixture, which was introduced into the pharmacopœias as a substitute for *Dr. Griffith's tonic mixture*, and by which name it is still commonly known, is one of the best and most generally employed of the pharmaceutical preparations of iron. Its operation is stimulant as well as tonic, and consequently it should not be administered in cases where there is any tendency to inflammatory action in the digestive organs; the dose is f3j. or f3ij. two or three times a day. As it does not keep well, it should be only prepared when wanted for use.—*Pilulæ Ferri Comp.*, D. L. (Myrrh, powdered, 3ij.; carbonate of soda; sulphate of iron; and raw sugar (treacle, L.), of each 3i.; rub the myrrh with the carbonate of soda; then add the sulphate of iron (and the sugar, D.), and make into a mass with treacle [rub them again; afterwards beat the whole, in a vessel previously warmed, until incorporated, L.]) Dose, gr. x. to xx. two or three times a day. Those pills become so hard when kept, as to be unfit for use.

“INCOMP.—Acids, and acidulous salts; and all astringent vegetable preparations.

“FERRI CITRAS.—*Citrate of Iron.*

“FERRI AMMONIO-CITRAS.—*Ammonio-citrate of Iron.*

“P. P.—Both those preparations are met with in the shops, and have been recently much employed in medicine although not contained in any of the pharmacopœias. They occur in the form of semitransparent, shining scales, of a garnet-red colour, inodorous; the citrate has a styptic metallic taste, and the ammonio-citrate has a similar, but much milder taste.

“C. P.—Citrate of iron is permanent in the air, it is very slightly soluble in cold water, but dissolves readily in boiling water; the solution reddens litmus paper strongly. The ammonio-citrate is a very deliquescent salt, it dissolves readily in cold or boiling water; it is neutral to test paper.

“PREP.—CITRATE OF IRON. ‘Crystallized citric acid, 3iv.; distilled water, f3iv.; moist hydrated peroxide of iron, about 3viiij.; dissolve the acid in the water in a glass matrass with the aid of heat, and saturate the solution, while boiling, with the oxide of iron, adding rather more of the oxide than the acid will dissolve. When cold, filter the solution, and make the quantity f3xvj. This solution spread out on glass will speedily dry, and separate itself from the glass in thin plates.’—AMMONIO-CITRATE OF IRON. ‘Add to the solution of the citrate prepared as above, sufficient ammonia to neutralize the excess of acid, and evaporate with a gentle heat to dryness.’ BERAL.

“TH. E.—The citrates of iron resemble much the tartrate before described, and are adapted for the same cases. The ammonio-citrate should be preferred to the simple citrate in consequence of its greater solubility.

"D. & M. OF ADM.—Gr. v. to gr. viij.; the ammonio-citrate should be always given in solution. By combining together 4 parts of citrate of iron, and 1 of citrate of quina, a preparation is obtained, which has been named *Ferri et Quinæ Citras*; it may be given in doses of from gr. iij. to vj. in the form of pill, in cases where a combination of these tonics is indicated.—*Aqua Chalybeata*. Under this name, a solution of citrate of iron in water charged with carbonic acid and flavoured with bitter orange peel, has been introduced to the notice of the profession by Messrs. Bewley and Evans of this city. The exact formula for its preparation has not been made public; every fʒvj. hold in solution gr. xij. of citrate of iron, it may therefore be given in doses of fʒij. two or three times a day. It is the most agreeable form perhaps, in which a ferruginous preparation can be administered, and in the trials which have been as yet made with it, it has proved very efficacious.—*Tinctura Ferri Aurantiacea*, WIRTEMBERG. (Iron filings, ʒiv.; Seville oranges, 4. Remove the peel, the white, and the seeds; beat the pulp with the filings in a stone mortar, and let the paste remain at rest for two days; then pour upon it, Madeira wine, fʒx. and tincture of orange peel, fʒij.; digest for 7 days, express, and filter). A very agreeable preparation; Dose, fʒj. to fʒiv.

"INCOMP.—The mineral acids; and all astringent vegetable preparations."

The foregoing extracts sufficiently indicate the character of this book. The reader will perceive that it is concise without being obscure, and that it contains just the sort of information that the practical man, whether the physician or pharmacien, requires. We prophecy that it will gain an extensive circulation, for it is the best volume we know of to serve as a handbook for the practitioner, to ascertain the strength and doses of new medicines, for the apothecary to learn how to prepare them, and we have no doubt that the student will soon discover and appreciate the value it is capable of affording him.

Principles of Medicine, comprising General Pathology and Therapeutics. By CHARLES J. B. WILLIAMS, M. D.

WE have no hesitation in asserting, that the reader will derive greater pleasure, and more useful practical knowledge, from this book, than from any other treatise on the subject, that we are acquainted with. Dr. Williams has already earned for himself a lasting fame, by his writings on "Diseases of the Lungs and Heart;" and that fame must, if possible, be increased still more by his "*Principles of Medicine*." The already crowded state of this number prevents our laying an analysis of it before our readers. We cannot, however, conclude without strongly recommending it to their notice.

Elementary Instruction in Chemical Analysis. By REMIGIUS FRESenius, Chemical Assistant in the Laboratory of the University of Giessen ; with a Preface by Professor LIEBIG. Edited by J. LLOYD BULLOCK.

ANY observation from us could hardly have as much influence with our readers as the following Preface:—"Dr. Fresenius conducts the course of elementary instruction, in mineral analysis, in the laboratory of the University of Giessen. During the two last sessions he has followed the method described in his work, entitled 'Elementary Instruction in Qualitative Chemical Analysis.' This method I can confidently recommend, from my own personal experience, to all who are desirous of obtaining instruction in organic analysis, for its simplicity, usefulness, and the facility with which it may be apprehended. I consider Dr. Fresenius' work extremely useful as an introduction to Professor H. Rose's excellent manual, and for adoption in institutions where practical chemistry is taught; but it is especially adapted to the use of pharmaceutical chemists. Further, a number of experiments and discoveries have been recently made in our laboratory, which have enabled Dr. Fresenius to give many new and simplified methods of separating substances, which will render his work equally welcome to those who already are familiar with the larger works on inorganic analysis."—JUSTUS LIEBIG.

We can only echo the flattering recommendation of Liebig.

The Surgeon's Vade Mecum. By ROBERT DRUITT. Third Edition.

THE work has reached a *third* edition, and this speaks more in its favour than probably any encomium we could now bestow on it. We cannot, however, avoid expressing our conviction, that had Mr. Druitt changed the title to that of "*System of Surgery*," to which it seems justly entitled, it would have removed the prejudice that many practitioners entertain against what are termed "Manuals" and *Vade Mecums*. The work of Mr. Druitt differs widely from such productions; it is the most accurate and ample *resumé* of the present state of Surgery that we are acquainted with. The numerous woodcuts illustrative of different diseases, accidents, and operations, are no less remarkable for their artistic finish than for their accuracy of detail. The *Vade Mecum* has been republished in America.

The Oculist's Vade Mecum; a complete Practical System of Ophthalmic Surgery. By JOHN WALKER.

THE work before us, modestly styled a *Vade Mecum*, will, on examination, be found entitled to its second appellation, "A Complete Practical System of Ophthalmic Surgery." It contains the result of twenty years' experience in this particular department of medicine, and will prove a useful and judicious assistant to the practitioner and a faithful preceptor to the student, and to both we strongly recommend it.

On the Nature and Treatment of Stomach and Renal Diseases; being an Inquiry into the Connexion of Diabetes, Calculus, and other Affections of the Kidney and Bladder, with Indigestion. By WILLIAM PROUT, M. D.

WE have already expressed our opinion of this great work, in our notice of the third edition. In that now before us the greater part of what appeared in the former editions remains unaltered; but, as might be expected, some portions have undergone the revision and change which the rapid strides lately made in organic chemistry required, and particularly as regards their application to practice. No medical man should be without it, and no library can be complete unless Dr. Prout's book obtains a prominent place in it.

Practical Remarks on Gout and Rheumatic Fever, and Chronic Rheumatism of the Joints. By ROBERT BENTLEY TODD, M.D., F.R.S., &c.

WE are informed in the preface, "that the work does not profess to give a complete history of these diseases; on the contrary, many details of symptoms, etiology, and treatment, have been purposely omitted, as irrelevant to the argument, the design of which is, by contrasting the phenomena of gout and rheumatism, with those diseases confessedly caused by a morbid state of the fluids, to claim for them a similar origin."

The author has availed himself of this opportunity to announce some facts which he does not recollect to have been noticed by any previous writer on the subject. These will be found in the section "On the Paroxysms of Gout appearing in low States of the System;" and in that "on the Rheumatic Diathesis," where it is shown that disease of the heart may come on in that state of constitution, irrespectively of the recurrence of the rheumatic paroxysm or fever.

With Dr. Todd's labours in anatomy and physiology our readers are well acquainted ; it was therefore to be expected that one who had devoted himself so much to the scientific departments of medicine, would throw new light on many points in the natural history of gout and rheumatism—diseases, which though they have engrossed much attention, can boast of a greater diversity of opinion, not only on their pathology, but on the means most appropriate for their treatment, than almost any other affection. If we look into writers, the most opposite views are advanced, and remedies equally opposed are recommended to our preference.

The first section of the work is taken up with general remarks on blood diseases, glanders, purulent infection, lead cachexia, diabetes, and Bright's disease. These afford illustrations of diseases depending on a vitiated state of the blood, and lead Dr. Todd to claim a similar origin for gout and rheumatism.

The third chapter contains our author's views respecting the period and the circumstances under which the gouty paroxysm manifests itself.

He says, "it does not appear to have attracted any notice, that a low or depressed state of the system is favourable to the development of the gouty paroxysm." That the subject has not attracted the degree of notice its importance requires there can be little doubt, but that Dr. Todd has gone too far in stating that it has not attracted any, is clear from the following passage in Dr. Barlow's Essay on Gout, in the *Cyclopædia of Practical Medicine*. "Various causes are instrumental in exciting the paroxysm, but they are all subordinate to those mentioned, and incapable of such effect, unless where *depravation of health has prepared the way*. Excess of venery is an acknowledged cause, as is also abuse of spirituous liquors, as well as indigestion, whether occasioned by the quantity or quality of food taken." Intense application to studious pursuits acts in the same manner. Sydenham informs us that when writing on this very disease, his most severe attacks were induced by immoderate application while preparing his Essays for publication. We could cite many other examples to prove that this fact (though, we admit, not sufficiently dwelt on by modern authors) has not entirely escaped attention ; but though the writers we have quoted, and others we are acquainted with, have acknowledged that depression of the system is the state most favourable for the supervention of the paroxysm, yet none of them have taken the exact view of the matter we find described by Doctor Todd. At page 42, he says :—

" But I hope to be able to show, by reference to cases, that, under

certain circumstances, a feeble or even exhausted condition of the body, the very opposite, indeed, to that so often seen in acute gout, will favour the development, and the recurrence of the paroxysm of this malady. And I cannot avoid adding my strong suspicion, that the popular prejudice against colchicum, as tending to shorten the intervals between the paroxysms of gout, may be not altogether unfounded, and that the bad reputation of the medicine, in this respect, may be owing to the injudicious use of it in too large doses, which, by their lowering and depressing effect, may have favoured the more frequent recurrence of the fits."

He then relates the case of a patient whom he had attended for gout; he was a gentleman, aged 30, of active habits, and fond of field sports, and somewhat addicted to intemperance:

"After his recovery, Doctor Todd directed him to pursue a plan of diet, taking animal food in moderation, abstaining from malt liquor, and using wine in very small quantities. In the space of three or four months afterwards, I was surprised to find that this gentleman had as many attacks of gout in the same toe, although he assured me he had not committed any error of diet to give occasion to the so frequent recurrence of the fits."

He had become emaciated and pale, and on inquiry it was found that he had carried the system of abstinence too far, drinking only water, and frequently refraining from meat. His mode of living was immediately changed, and for two years afterwards he remained free of an attack. Such cases frequently come before the medical practitioner.

The remaining cases are instances of the disease coming on after the system had been lowered in the progress of other diseases. One of the patients, who was of a gouty habit, and who had been often bled for various inflammatory affections, observed, that invariably on losing blood, he was attacked with a paroxysm of gout.

In the fourth chapter, our author enters at some length into a discussion on the nature of gout, and strongly opposes the views of Liebig, who maintains the old doctrine, that the lithic acid diathesis is the cause of gout. We have not space to go into the details of his argument on this subject, and must content ourselves with giving the summary of his views in his own words:

"It appears to me that we must look for the matter of gout as a compound, derived from a product of unhealthy action in the stomach and duodenum, which, being absorbed into the blood, unites there with some element of the bile which has been suffered to accumulate, through the defective secretory action of the liver.

"As the same causes which induce these two states will give rise

to a lithic acid diathesis, we find it usually associated with them; but the former may exist without the latter, and, therefore, gout may show itself without the occurrence, at the same time, of a preternatural quantity of lithic acid.

“An organic compound, such as I have conjectured, may exist in the blood in variable quantity, and for an indefinite period, contaminating the whole frame and the offspring from it, and may thus give rise to the gouty diathesis; or this matter, ever present in the system, may be liable to periodical accumulations, which can only be got rid of by periodical paroxysms.”—Page 73.

We are obliged to pass over (not without great reluctance) the many excellent precepts laid down by the author for the treatment of the gouty paroxysm, but the following are too important to be omitted, and we shall therefore lay them before our readers. They refer to the administration of colchicum.

“1. Colchicum should not be given in the asthenic form of gout.

“2. Colchicum should never be given at the onset of paroxysm, nor until the bowels have been acted upon by mild purgatives.

“3. The first doses of the medicine should be very small; they may be gradually increased.

“4. Colchicum should be always administered at first uncombined with any other medicine, until the practitioner has satisfied himself that it is not likely to disagree with the patient. And, indeed, there is always a disadvantage in administering this medicine in combination with others; since it may become difficult, if not impossible at times, to determine what effects should be ascribed to the colchicum, or what to the other ingredients.

“5. It should not be administered so as to excite nausea, vomiting, or purging. These effects should be regarded as indicative of the unfavourable operation of the medicine.

“6. Colchicum may be regarded as acting favourably, when, under its use, the urine is increased in quantity, or more abundant bile is discharged; when the fæces, though solid, are surrounded by mucus, and the skin secretes freely.

“The effects of colchicum should be carefully watched, as, like digitalis and other medicines, it is apt to accumulate in the system.”

The same reasons which compelled us to limit our extracts respecting the treatment of gout to those solely referring to the employment of colchicum, prevent us quoting from the very admirable chapters on “Rheumatic fever,” “Rheumatic Affections of the Heart,” &c. Section ix. is occupied with the consideration of a form of the diseases which our author thinks is associated with, if not dependent on, derangement of the uterine functions. After detailing the symptoms of a remarkable case of the affection under consideration, Dr. Todd gives the

remarks of Dr. Rigby ; we shall offer no apology for inserting them in this place :

“ I have been for several years aware that many common derangements of the uterine organs are frequently connected with a state of the system analogous to what, when it attacks the limbs, is known by the name of rheumatic gout, arthritis, &c. This is more especially the case with certain forms of dysmenorrhœa, inflammation of the os and cervix uteri, with albuminous discharges and the early stage of scirrhus uteri.

“ The local symptoms of this state are uterine pains with sense of weight, distention and bearing down, and frequently much throbbing about the uterus and rectum. The mucous membrane of the vagina is relaxed, much swollen and engorged, but without any symptoms of *active* circulation in the part, and frequently communicates a sensation to the patient of the canal being narrowed, or nearly closed. A thick albuminous mucus, either like white of egg, or of the creamy character, is secreted ; the uterus seems to partake in the affection, being usually somewhat larger and harder to the feel than in health, and the os uteri swollen and painful, and in aggravated cases, lacerating pains and actual inflammation of the part occur.

“ In many cases there is a distinct secretion of air from the lining membrane of the uterus or vagina, or both, which the patient herself is aware of, by its escaping when she puts the abdominal muscles into action, moves the thighs, &c. In some cases it even accumulates in the uterus, and distends it, coming away in considerable quantities at a time.

“ A similar condition of the rectum almost invariably accompanies this affection, characterized by much hæmorrhoidal congestion ; in many cases an albuminous mucus, similar to that from the vagina, is secreted. Gas is also evolved, which is apparently secreted in the rectum itself, and not disengaged from the intestinal contents in the higher portions of the bowels, for flatus is constantly found by the patient in the lower part of the rectum, without any preceding borborygmi or symptoms of its having been caused by the peristaltic action along the intestines.

“ The urine is usually of high specific gravity, strongly acid, with large proportion of lithic acid and lithate of ammonia, the phosphate of lime is always copious, the other phosphates are more variable ; but a remarkable feature in the urine of many of these patients is the large excess of urea which is so frequently present. Thus in six cases which are, and have been for some time under my care, and whose urine I have carefully examined about once a fortnight, out of forty-eight analyses an excess of urea has been shown thirty-two times.

“ In many of these cases there have been well marked symptoms of gouty or rheumatic, or rheumatico-gouty affections of the limbs. The local symptoms of the uterine affection, as above enumerated, have shown the same sudden changes of increase and abatement as

we see with rheumatic gout in other parts of the body, and have been relieved by precisely similar treatment. This engorged state of the mucous membrane with albuminous secretions, is not peculiar to the vagina and rectum in a rheumatico-gouty habit, but is known to exist also in the urethra. Under similar circumstances I have also seen bubbles of air expelled from the bladder when drawing off the last portions of its contents in a lady of luxurious and intemperate habits. The gorged and moist state of the conjunctiva in gouty gourmands and drunkards, and their loud rattling mucous cough, and abundant expectoration, show that the mucous membrane in other parts of the body take on a similar action in such cases. Certain forms of asthma come under the same head, the sudden engorgement of the mucous membrane of the air-cells and passages, the consequent dyspnoea, the copious expectoration which follows when the attack begins to subside, the acknowledged connexion between asthma and the gouty and rheumatic gouty diathesis, and its well known relation with renal disease, all tend to confirm this view."—p. 158.

If the observations of Drs. Todd and Rigby prove, on further experience, to be correct, the line of treatment indicated is clearly, in the first place, to prevent the retention of unhealthy secretions in the uterus; and secondly, to promote the healthy action of that organ, particularly if the symptoms already detailed manifest themselves in a patient exhibiting other features of a rheumatic or gouty diathesis.

The next section treats of the *Chronic Rheumatic Arthritis*, so ably described by the late lamented Mr. Colles, and Drs. Adams and R. W. Smith, with whose writings our readers are so well acquainted, that we shall be excused quoting the very lucid and valuable remarks contributed by Dr. Todd. We must not omit mentioning that he endeavours to trace a connexion between the appearance of the disease in the female and uterine derangement. As we have not inquired into this particular point, we shall offer no opinion on the matter, but recommend it to the attention of such of our readers as have opportunities of observing the disease. It is to be hoped that those who henceforth investigate this particular form of rheumatism will not confine their researches to the mere pathological change in the articulating surfaces of the bones and neighbouring parts, concerning which we know as much at present as we are likely to do; but that they will devote their attention to the discovery of some *line of treatment*, to which practitioners may have recourse, in order to *arrest* the progress of the disease; for once the change has taken place, it is not to be expected that our interference will restore the parts to their normal condition. There is one feature connected with this disease as it occurs in the shoulder and hip, for which we have in vain looked for an explanation in writings on the subject—it the *nature* of the

atrophy of the small muscles in the neighbourhood of the joint, while those of the rest of the limb retain their plumpness and tone. Mr. Adams, in his masterly article on the "*Abnormal Condition of the Hip Joint*," in the Cyclopædia of Anatomy, says :

"The nates of the sound side is unusually prominent, while that of the affected side is *quite flat, and no trace of the lower fold of the glutæus is seen.* The muscles of the thigh also seem *somewhat atrophied, still they do not want for firmness,* and we uniformly observe that the *calf of the leg of the affected limb is not inferior in size and firmness to the other.*"

The same circumstance is noted by Dr. Smith, in his paper on "The Diagnosis of Fractures of the Neck of the Femur," published in the sixth volume of this Journal : "The opposite buttock becomes prominent (he says), and its muscles strong; while upon the affected side, *the nates lose their prominence, and their fold disappears, but the muscles never become soft or flaccid,* they remain as firm to the feel as in health." We have marked these passages in italics, to indicate the great difference in the kind of wasting which accompanies this affection from that attending the more common form of hip disease. We have noticed the same phenomenon in cases where the disease was situated in the shoulder joint ; in these instances the scapular muscles were all atrophied and powerless ; whilst those of the arm and forearm, as well as the trapezius, were as well developed as in the opposite limb. In one the patient had the disease also in the joint between the metacarpal bone of the thumb and the os trapezium ; and here the same law was observed, for the muscles composing the ball of the thumb had all undergone atrophy, though those of the forearm and arm were in their healthy state of development. Amongst the many peculiarities in the alteration of the parts around the diseased joint, one of the most interesting is this form of atrophy of the neighbouring muscles, *without flaccidity or softening of their structure, or wasting of the rest of the limb.* Another fact connected with this disease is the tendency the fingers exhibit to be drawn to the ulnar side of the hand, when the disease attacks the wrist or neighbouring joints. This circumstance, though noted both by Mr. Adams and Dr. Todd, is not explained by either.

Where so many different structures are implicated, it would also be desirable to ascertain in which the morbid process commences, a point upon which the writers alluded to are quite silent. Some time ago, in reading a paper on "The Round Ligament of the Thigh-bone in Man," by Professor Knox, of Edinburgh,* we met with some observations which may probably

* Vide "The Edinburgh Medical and Surgical Journal," No. cxlvii. page 128.

throw some light on this subject : “During my labours (he says) in the practical rooms, in the course of the present winter session, I accidentally mentioned to a very distinguished and talented student (Mr. Hay, of Newcastle), that, in dissecting the hip-joint, on which he was at the time engaged, I should be happy to point out to him some views I had adopted, a few years ago, in reference to the uses of the round ligament, provided he spoke to me at the time he was about to open the joint. Accordingly, having prepared the capsular ligament, dissecting and examining it carefully, an incision was made cautiously into it, anteriorly, so as to bring the interior of the joint into view, and I laid hold of the femur, to explain to him the functions of the round ligament, such as I supposed them to be. On gently rotating the limb outwards, it was immediately discovered that the round ligament did not exist, all the other structures in and about the joint appearing at the same time, on a first and superficial view, to be perfectly sound.

“As this was the first occasion on which I had ever before observed the round ligament to be wanting in a hip-joint, otherwise perfectly sound, and bearing no appearance of having previously suffered from dislocation, or from disease, chronic or acute, I proceeded to examine the joint with very great care ; the *muscles surrounding were healthy, and of the usual size* ; and the capsular ligament bore no marks of rupture or previous injury, to warrant the conjecture that the joint had ever been dislocated. On the other hand, it was easy to see that the joint could not be called sound in every respect ; in fact, that appearance which some consider morbid, and others not, viz. atrophy or *usure* of the cartilages, had commenced, and made considerable progress, as well on the head of the femur, as on the corresponding acetabular surface. The only vestige of a round ligament was a fine fibre, like a piece of thread, lying coiled up, on the surface of the fatty appendage in the notch, and unconnected with any other part whatever. The opposite joint was normal.”

Dr. Knox asks the following questions:—“1st. Was it simply one of original malformation, whose principal features were an absence of the round ligament? 2nd. Was the destruction of the ligament owing to an old dislocation of the joint, which, having been reduced many years ago, left no traces of the accident recognizable in the capsular ligament, but had yet effectually destroyed the round ligament?” After discussing the various arguments for and against each of these views, he proposes the following, as the most probable explanation of the phenomenon, viz.—“To ascribe the whole appearance to that peculiar change called atrophy of the cartilages, and

synovial membranes, unaccompanied by any positive ulceration, or the formation of purulent matter; in short, resembling much a mere mechanical destruction of these structures, followed by the porcelain, ivory deposit on the bone; a process seemingly set up by nature, to prevent the utter destruction of the joint. For it is manifest, whatever destroyed the cartilages, might also destroy the round ligaments; or the round ligament having been first snapped through, *usure*, or wasting of the cartilages, and the porcelain deposit, would necessarily follow; and in this way I feel disposed to combine, in some measure, both views."

Drs. Adams and Todd both consider falls on the great trochanter as a not unfrequent exciting cause of the disease. It is not going too far to claim the same importance for sudden wrenches of the joint producing rupture, or laceration of the round ligament, particularly as the disease is most frequently found in that class of patients whose avocations render them peculiarly liable to both of these accidents. In another part of the same paper it is stated, "I have been informed by my friend Mr. Dick, of the Veterinary College here, that it is not very unusual to find the round ligament of the femur absent, in the horse." He attributes its absence, in these cases, to rupture, from *sudden violence, short of dislocation*. Besides the absence of the ligament, other changes go on in the joint, *subsequent* as he considers, and *in some measure the result of the original accident*, viz., *atrophy of the cartilages of incrustation*, and the conversion of a part, at least, of the abraded surfaces, into the *ivory structure*; in short, the very changes I described as occurring in the case which formed the commencement of this memoir."

These observations, be it observed, by no means militate against the rheumatic nature of the affection, for the remarks made by Dr. Todd, in speaking of falls on the great trochanter, as capable of giving rise to the disease, are equally applicable to those instances where the injury consists in a violent wrench of the joint. At page 176, he says:

"This is by no means improbable (i. e. falls on the trochanter), nor is the fact opposed to that view of the disease, which assigns it a rheumatic origin, for doubtless the perversion of nutrition, excited by the violence of the fall, would, as often happens in gout, occasion a greater attraction of the rheumatic matter to the injured joint, than would otherwise have taken place."

The last section of the work relates to the treatment of rheumatism, and in it will be found the most useful and satisfactory precepts for the management of patients afflicted with this disease, we have ever read. With the treatment of every

feature, constitutional and local, our author appears to be intimately familiar. His remarks on the management of the rheumatic diathesis, are entitled to the highest praise. Our notice has already extended far beyond the limits we had prescribed to ourselves, and we regret being obliged to conclude without giving a few extracts from the judicious and enlightened views contained in the last chapter. But this is not perhaps to be so much regretted, as our readers will no doubt procure the work, and study it carefully for themselves. We feel satisfied that further observation will confirm the views taken by Dr. Todd, and lead to less conflicting notions, concerning not only the pathology but the treatment of gout and rheumatism; and for ourselves, we thank our author for the great pleasure and useful information we have derived from the perusal of his work, and end by recommending it to every class of practitioners, but particularly to those whose education has been biassed by the too-exclusive doctrine of SOLIDISM.

A Manual of Medical Jurisprudence. By ALFRED S. TAYLOR.

THIS is certainly the most elaborate and complete work that has yet appeared on the subject. It is printed on superior paper, the type is exquisite, the style clear and concise, and the method and arrangement beyond ordinary commendation. It contains an amazing quantity of cases lately tried, many of which occurred in the author's own practice, which entitles it to be considered *now*, what Beck was, *in its day*. We close this short notice with a strong recommendation to the student to purchase the work as a text-book; and the country practitioner will find it an invaluable guide in the many trying cases so constantly coming before him. In our next Number, we intend laying a more lengthened notice and analysis of it before our readers.

SCIENTIFIC INTELLIGENCE.

Brief Remarks on the Treatment of Fistula Lacrymalis by Dilatation, by Isaac Parrish, M. D., one of the Surgeons to Wills' Hospital.—In several cases of fistula lacrymalis, which have recently fallen under my care, a plan of treatment has been pursued, differing in some respects from that generally recommended; and sufficiently satisfactory in its results to warrant a public notice.

The principle of treatment is not new; it is precisely that which is recognized by the best authorities, in the management of strictures of the urethra, by the gradual and steady operation of bougies of various sizes. The two affections are indeed very similar; in both a mucous canal is obstructed by the thickening of its internal surface, under the influence of chronic inflammation; whereby the fluids destined to pass through it, are impeded in their course.

In the case of the nasal duct, when the obstruction is complete and permanent, the lacrymal sac becomes inflamed, or distended to such a degree, as either to burst spontaneously, or to require an opening—thus forming a fistulous opening over the sac.

The obvious indication under these circumstances, is to re-establish the passage to the nose, and thus to relieve the patient from the unpleasant consequences of a constant accumulation of fluids within the lacrymal sac.

In mild cases of this description, injections into the sac and duct by Anel's syringe, the passage of probes, and the adoption of a course of treatment to reduce inflammation, has been found sufficient to effect a cure. In the large proportion of cases, however, a more energetic practice becomes necessary. The course generally recommended, and practised, is to enlarge the fistulous opening, and insert into the duct the nail-headed style of Ware, which is worn by the patient, and is said to secure the passage of the tears to the nose.

Never having used this instrument, I cannot speak from experience of its merits, having always been able to effect the desired object by less objectionable means.

The plan pursued has been, first to reduce any inflammation which may exist around the fistulous sore, by means of emollient poultices, and then introduce a small piece of fine wax bougie, having an acute point, down to the strictured part (or as far as it can be inserted), and by turning over its blunt end to secure it there by means of an adhesive strip drawn firmly over it. This may be removed in a day or two, and after washing out the parts, may be re-introduced, or one of a larger size inserted, if it can be borne. At the commencement of

the treatment little more will be accomplished than to dilate the fistulous orifice, and to induce a more healthy action in the mucous surface of the sac and duct, but by perseverance in the plan, an advance will be made from day to day upon the strictured surface; until, finally, a bougie can be passed through the whole extent of the canal. This being accomplished, the dilatation should be continued, until the bougie will pass freely, and until all hardness and inflammation has disappeared from around the fistulous orifice—when it may be permitted to heal up, which it will usually do under simple dressings.

By this process the canal is gradually dilated, and its mucous surface restored to a healthy condition, without doing violence to the parts, while the duct is placed in a condition to resume its natural functions, without the necessity of permanent dilatation. If, however, there should be a disposition to relapse, after the closure of the orifice, it may be counteracted by the use of stimulating ointments to the inner surface of the lids, by astringent washes, or by such other means as circumstances may indicate, preventing, if possible, the re-opening of the fistulous sore.

Beer, the German oculist, has recommended the use of catgut to force the obstructed duct. A piece of catgut of the ordinary length and size of a small fiddlestring is passed through the duct into the nose, one extremity is brought out and fixed near the ala nasi by sticking plaster; and the other secured to the brow by a turn or two of bandage. Every day a fresh portion of catgut is drawn through, until several sizes have been made to pass, when the cure is considered complete, and the fistula is allowed to heal.

A serious objection to this method is found in the difficulty of effecting the passage of the duct, at one operation, by any instrument, however fine, and should the operator succeed, the force required would be apt to tear the mucous surface and excite a degree of inflammation, very unfavourable to the ultimate restoration of the parts; whereas, by the gradual process here recommended, the difficulty is slowly overcome, while, at the same time, the diseased mucous surface is restored to healthy action, and the integrity of the canal is preserved.

Indeed, one of the great advantages of the bougie made of waxed linen, is its bland and salutary action on a surface which has been thickened by chronic inflammation. This is evidenced by the increase of mucous discharge which follows its introduction, and in the gradual return of the membrane to its normal state. The same remark applies to strictures of the urethra, and hence it was that the late Dr. Physick and others preferred the bougie of waxed linen, for the treatment of stricture, to those of more modern invention.

The instrument is made by dipping a piece of fine linen into white wax in a melting state, and suddenly withdrawing it. It is then allowed to cool, and cut into portions which, when tightly rolled, form a bougie, of any size which may be required.

Another advantage possessed by this instrument, is, that it may be cut or bent with great ease, and be made smaller by unwrapping,

without the necessity of having a great number of sizes already prepared.

It may be mentioned, also, that this form of bougie is very useful in the treatment of fistulous sores or sinuses, where it is important to excite a moderate degree of inflammation.

The introduction of a bougie of suitable size into a sinus, and its retention there by appropriate dressings will often be found more effectual in promoting healthy action, than the use of stimulating injections, or other more violent means.—*Philadelphia Medical Examiner*.

Case of Abscess through the Lumbar Region of the Back—Discharge of twenty Stones, by A. H. Perkins, M. D.—The patient is a man of apparently good constitution, and has enjoyed moderate health for many years. About ten years since, he says, he had frequent pains in his back, and much acidity of stomach, which were removed by treatment.

In February, 1842, I saw him, in company with Dr. D. Tabb, of Matthew's county. A few months before, a swelling had commenced in his back, just below the kidney of the left side, and continued to increase until this time. Poultices, &c., had been used, and now a fluid was perceptible to the touch. An abscess lancet was introduced to the depth of an inch through the swollen part, and a considerable quantity of serous blood escaped, and continued to escape for several days. The poultices were reapplied, but owing to irregularity of treatment, a sinus of an unhealthy character was formed, which was cured with port wine injections, caustic, &c. No disease of the kidney was suspected. The digestion was good, urine tolerably clear, and the gentleman able to attend to his office of sheriff, throughout the whole period, and it was thought advisable to close the wound. It continued, however, tender, with occasional pain in the part, until December following, when it commenced rising again; broke in March following and discharged the stones above mentioned. The pain in the back was intermittent throughout the whole period, not much increased by pressure; the constitutional symptoms very slight, and the urine not more sedimentous than occurs in slight febrile affections, and not constant in that situation.

The place is now open, discharging pus with a grisly substance protruding from it. I advised the application of caustic; constitutional treatment was refused, the patient being a *Thompsonian*.—[What is a "*Thompsonian*"?—ED.]—*Philadelphia Med. Examiner*.

Fatal Case of Perforation of the Duodenum, by Joshua W. Ash, M. D., of Delaware County, Pa.—T. R. æt. 50 years, of strongly marked bilious temperament, energetically active in the prosecution of an extensive business, regular and temperate in his habits, and possessing robust, general health, was attacked suddenly, at 11 o'clock, A. M., June 15, 1843, while sitting in a meeting for worship, with pain in the epigastric abdominal region of the most intense severity.

He had complained for several hours previously of a heavy pain in the right hypochondrium, hard to bear, but not in his estimation sufficiently important to detain him at home. The same had occurred at several different times during the preceding week, which, after lasting a longer or shorter time, had gone off, leaving little or no inconvenience behind. Six weeks previously he had a chill, followed by fever, which confined him but for a day or two. His appetite was good, sleep natural, digestion, assimilation, and other functions healthy; intestinal, urinary, and other secretions perfectly regular, and his whole health, with the above-noted exceptions, had been perfectly good up to the moment of attack. I happened to be present, and being called upon, accompanied him home. His pulse was entirely unaffected, his tongue clean and moist, with a skin soft and natural, but which soon became bedewed with a copious perspiration, from the intensity of his suffering. His stomach was calm, and he had a free alvine discharge since breakfast. There existed reducible inguinal hernia of the left side; which was found upon examination entirely free from soreness and pain. In addition to the abdominal pain he complained much of a sense of stricture across the shoulders, extending from before backwards, such as would result from a hard cord drawn tightly across, causing an intensity of suffering, but little less in degree than the abdominal pain. To mitigate the extreme severity of the agonizing pain under which he was suffering, was to my mind the first indication, and one that called imperatively for prompt and decisive action. To effect this object, and with a view at the same time to speedily unload the bowels, I directed full doses of opium, combined with calomel and aided by stimulating enemata. A large sinapism was applied to the abdomen, and blood freely drawn from the arm.

Failing by these measures to afford the desired relief, the injections having in every instance returned without bringing away any fæcal matter, I had him immersed in a warm bath, with only temporary relief. Blood was again drawn freely from the arm, and calomel and opium, in divided doses, alternated with castor oil and sp. terebinth. directed to be given every two hours until the bowels should be moved, together with fomentations to the abdomen to be steadily and perseveringly applied. Upon taking the third dose of oil his stomach revolted; it was consequently discontinued, and infusion of senna substituted, which, with 2 grs. of calomel, were directed to be continued every two hours, until the desired effect should be produced.

Twelve hours had now elapsed from the time of attack; the pain was mitigated but not subdued; on the contrary, it continued in a degree eminently distressing; the bowels had not yet responded to the measures used for the evacuation of their contents, the epigastric and hypochondriac regions (particularly the right) at this time had become in a high degree sensitive to pressure, the sensation produced being, as he expressed it, peculiar and indescribable, but not strictly painful. There being manifest disposition to sleep, I left him for the

night, and saw him again at 5 o'clock on the following morning. He had passed much of the night in a state of disturbed sleep, and was still dosing. Not yet was there any improvement in his condition, bowels still unmoved, the pulse had become irritated and accelerated in frequency. Directed a continuance of the treatment, with repetition of the warm bath, I gave a drop of croton oil, to be repeated in an hour should it not have operated, and left him until 9 o'clock, A. M., when I again saw him, and learned there had been a free discharge of blood from the hæmorrhoidal veins accompanying the return of an injection, but without the slightest relief to the symptoms; directed a steady continuance of the treatment till noon, substituting an emollient poultice over the whole abdomen in place of the fomentations, and then, should relief not have been procured, six dozen leeches to be applied to the abdomen. The abdominal sensibility had become increased in acuteness without extending much beyond its former limits; still the sensation produced upon the slightest touch, although unbearable, was not that of *pain*, but, in his own words, "a sort of indescribable tickling of the whole insides." His respiration had now a marked character of abruptness. The tongue was still clean and natural, as was also the state of the skin over the whole body. Thirst, which hitherto had not been remarkably urgent, became now incessant, calling for small quantities of liquid. The stomach was still unaffected with nausea, extreme restlessness demanded an almost incessant change of posture: the position generally assumed was on the back, slightly inclining to one or the other side, with the head and shoulders elevated to an angle with the horizon of about 30 or 35 degrees.

8 o'clock, P. M. The leeching has not procured for him the slightest relief, but the operation having occupied a long time, has induced a good deal of exhaustion. The bowels still continue obstinately unmoved, and although the pain is not so agonizing as at the beginning, it is still harassing in no ordinary degree; in short, the whole condition of the man is one of unmitigated, indescribable wretchedness. From this time till the hour of his death, which event occurred at seven o'clock next morning, 44 hours from the time the attack began, was occupied in persevering endeavours to quiet irritation, combat the advancing evidences of inflammation, and procure alvine discharges; but it was all to no purpose, the bowels remaining obstinately closed until the last, not giving issue even to the discharge of gas, until within a very short time of death, when a free discharge of flatus took place. His stomach became sick about four hours before death, from which time he threw up at intervals small quantities of bile-tinged liquid. His mental manifestations were unclouded, and calm throughout the whole period, excepting a few slightly delirious expressions, while in a half sleeping state, when under the influence of opium.

Autopsy, eight hours after death, aided by my friend, Doctor William E. Haines. Present, Drs. Joseph Wilson and A. E. Small.

The exterior of the body presented no marks worthy of particular

note. The abdomen, somewhat distended, was more resisting than is usual. Upon cutting into the peritoneal sac there was a rush of gas; its cavity was found to contain a large amount of serous liquid tinged with bile, bearing a close resemblance to the liquid voided from his stomach during the last few hours of life; and, in the more depending parts a heavier matter, of a muco-purulent consistence and appearance. Recently formed imperfect adhesions existed between the abdominal walls and viscera, in the right hypochondriac and contiguous portion of the epigastric region, where the evidences of the highest degree of the inflammatory action were met with. From this point it appeared to have spread as from a centre, and extended itself over the diaphragm, liver, stomach, spleen, and transverse colon—the omentum partaking largely. The whole surface of the liver, spleen and diaphragm, were coated with a layer of purulent matter; the small intestines exhibited but slight traces of inflammatory action. In the progress of the examination it soon became obvious that there existed somewhere a perforation of the intestinal canal, the search for which was commenced at the colic extremity. Passing ligatures around the bowel, it was cautiously separated by the scalpel, and carefully examined throughout its entire length, until, arriving at the duodenum, it was divided and removed. No evidences of disease deserving notice were discovered in any part of the removed portion, consisting of jejunum, ileum, and colon. At this stage of the dissection, happening to notice that the gall-bladder was greatly distended, I passed my finger under its duct, and at the same time making pressure upon its surface, there was an immediate escape of some bilious liquid into the cavity of the belly, which led at once to the discovery of the perforation. This was of a circular form, with clean, even edges (as though it had been made by a shoemaker's punch), about as large as a medium sized goose quill. Passing through the coats of the bowel near the entrance of the gall duct, it occupied a position on its concave or left side, about one and a half inches below the pylorus. Passing a ligature around the œsophagus, the stomach and duodenum were removed for close inspection; laying them open from end to end, the perforation was found to have resulted from ulceration, which, judging from its appearance, was supposed to have occupied a long time in its accomplishment. Through the mucous and muscular coat it was about five-eighths of an inch in diameter, with clean, callous edges, rounded, and much thickened by interstitial deposition—the thickening extending but a little beyond the circumference of the ulcer. The internal coat of the stomach, as well as of the bowels, was apparently perfectly healthy, except only at the seat of ulceration, and for a few lines immediately around it. The gall-bladder was full to repletion, of a very thick, black, semi-liquid substance, which appeared to be bile mixed with venous blood. The colon contained a quantity of liquid fæces; and in the small intestines a single lumbricus was found.—*Philadelphia Medical Examiner*.

On Punctures of the Eye, by M. Guépin.—M. D., an architect, brought his son to M. Guépin, in 1843. A minute fragment of iron had entered his eye, reaching from the cornea to the capsule of the crystalline lens, and almost touching the iris. It was impossible to grasp the fragment, and an incision would have been difficult, as it lay upon the upper edge of the pupil. M. Guépin accordingly devised the following remedy. He prescribed a collyrium made with distilled water and acetic acid, being persuaded that if the fragment became oxidized at its corneal extremity, the oxidation would spread over its whole surface, and that the dissolution and absorption of the fragment would follow. The event justified his supposition. At the end of three weeks the cure was complete, with the exception of an almost imperceptible white point upon the capsule, and a very slight cicatrix on the cornea. In another case, the same collyrium was again used with success to carry off the oxide of iron left in the substance of the cornea by a fragment of iron which had remained in it a considerable time.—*Gazette Médicale, from the Annales d'Oculistique.*

Case of Hemiplegia, consequent on tying the common Carotid, by O. Fairfax, M. D.—In a late Number of this Journal we quoted a case of hemiplegia, from tying the carotid artery; we shall now add another,—the subject seems to demand attention:

“Observing in a late Number of the Medical Examiner, an instance of hemiplegia, consequent on tying the common carotid, and believing it to be an unusual effect of the operation, and an additional and striking exemplification of the fact, that opposite conditions of the brain, as regards its supply of blood, may result in the production of some symptoms in common, I am induced to send you the following similar case.

“On the 18th of July, 1842, in presence of Doctors Murphy, Powell, and Richards, of this place, I applied a ligature to the left common carotid, an inch above the clavicle, and my patient became hemiplegic as regards the limbs of the right side, but the face was not affected. The hemiplegia may have occurred at the moment of tying the ligature, but it was not remarked by the attendants until an hour or more after the operation. The patient, who was a middle-aged lady, already much reduced by chronic disease of the lungs, remained faint and hemiplegic to her death, which occurred after five days, apparently from exhaustion. Her mental faculties continued perfect to the last hour.

“*Alexandria (D. C.), August 31, 1843.*”

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Fig. 1.

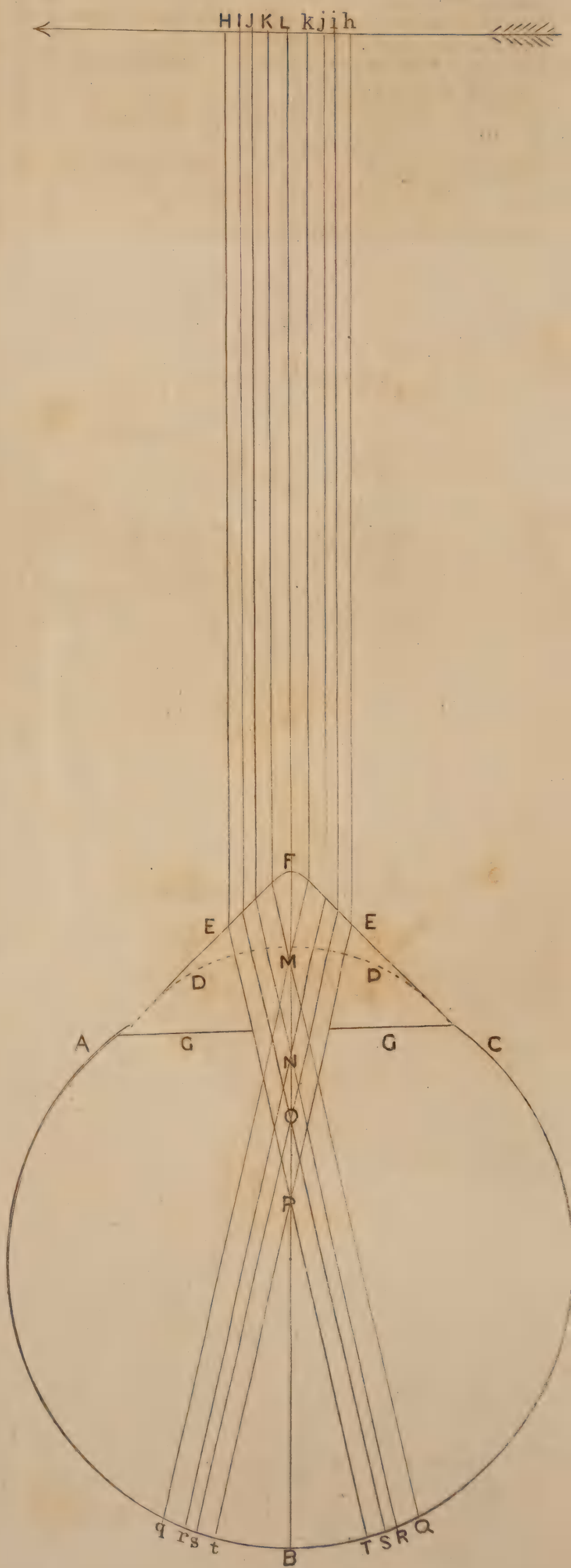
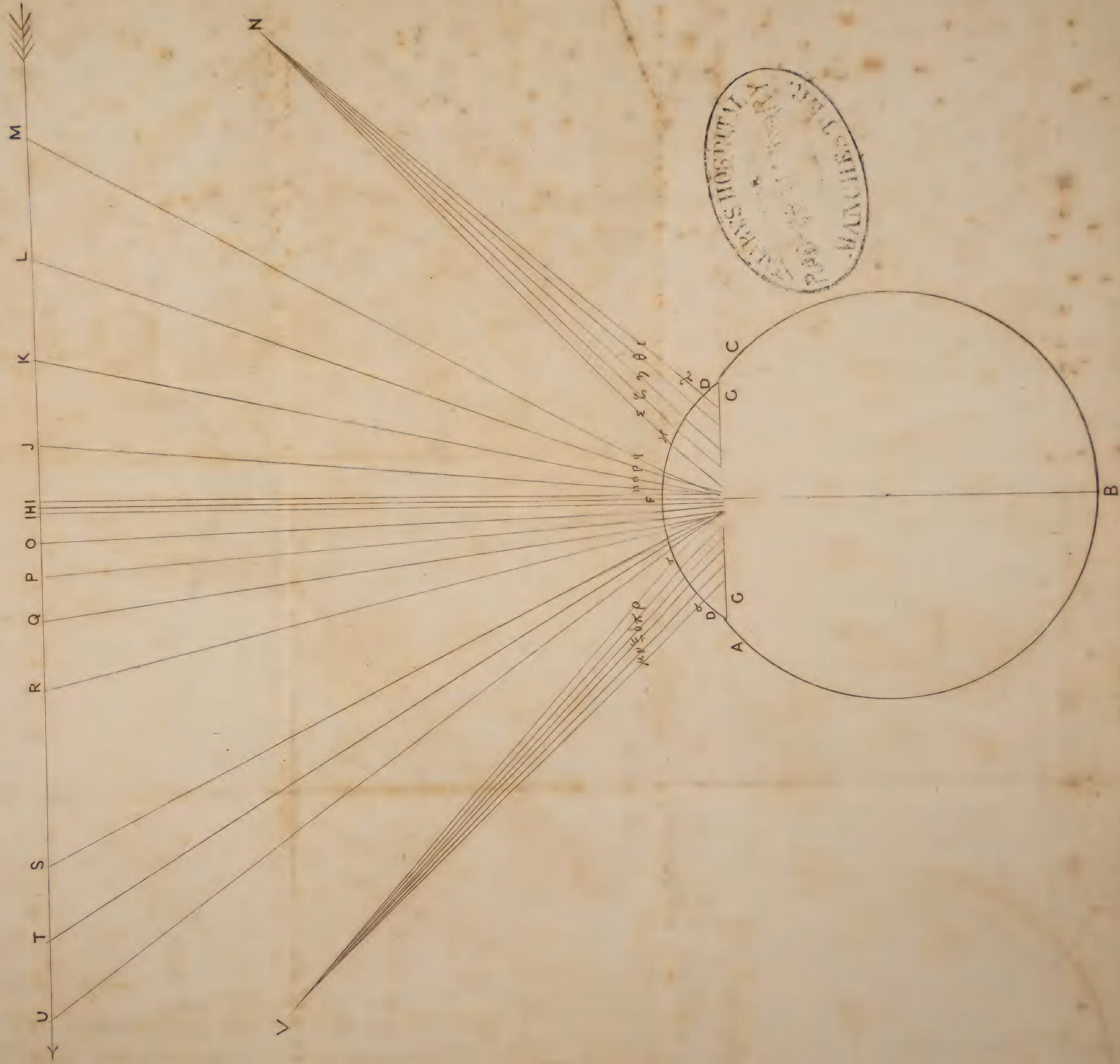
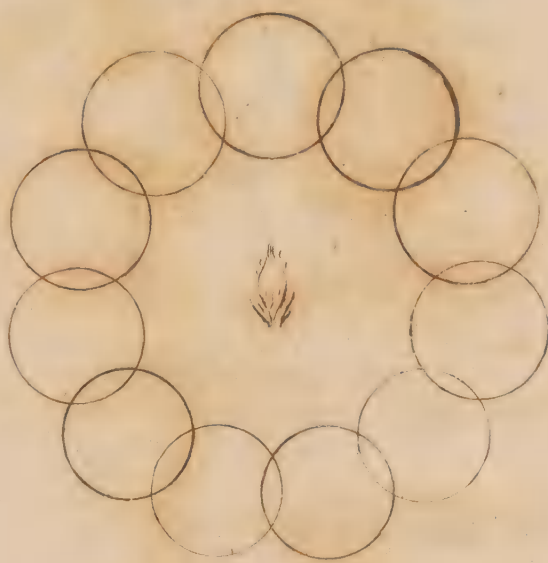
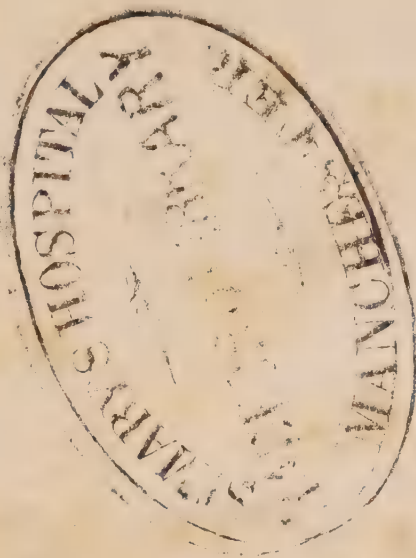


Fig. 11

A circular ink stamp, oriented upside down, with the text "ST. MARY'S HOSPITAL" around the top inner edge, "RADFORD" in the center, and "HAMPSHIRE" around the bottom inner edge.

Fig. III





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